

INTRODUCTION TO LOGIC

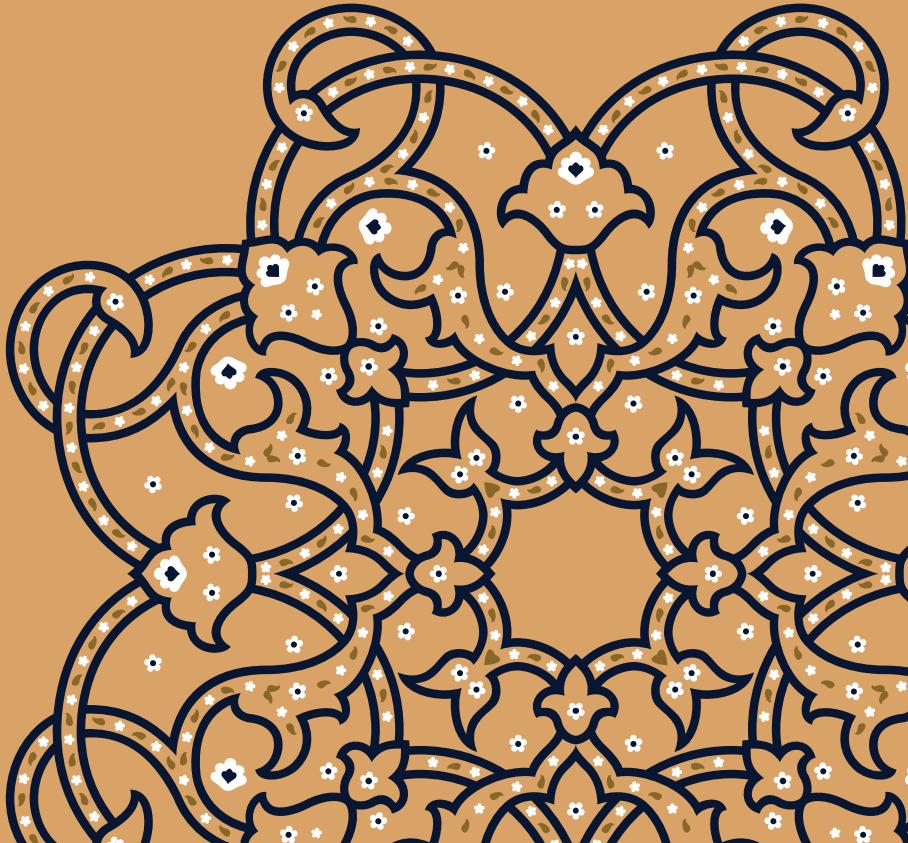
A COURSE BASED
ON THE “ISAGOGE”

A Primer in Classical Logic

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The Ten Foundations of the Art of Logic

(المَبَادِئُ الْعَشَرَةُ لِعِلْمِ الْمَنْطِقِ)

العلامة محمد بن علي الصبان

(d. 1207 AH/1792 CE)

إِنَّ مَبَادِيِّي كُلَّ فَنٍ عَشَرَةٌ ● الْخُدُودُ وَالْمَوْضُوعُ ثُمَّ الْقَمَرَةُ
وَفَضْلُهُ وَنِسْبَةُ وَالْوَاضِعُ ● وَالْإِسْمُ الْإِسْتِمْدَادُ حُكْمُ الشَّارِعِ
مَسَائِلُ وَالْعَيْنُ بِالْعَيْنِ اكْتَفَى ● وَمَنْ دَرَى الْجَمِيعَ حَازَ الشَّرَفَةَ

Each science contains these ten elements
The essence, its subject and benefits

Its virtue, relations, and source
Its name, whence it draws, legal force

Add topics, and all is contained
With mastery much honor is gained.

1. Definition (الأخذ)

- a) Logic may be defined as “the art which directs the very act of reason, that which enables us to advance with order, ease, and correctness in the act of reason itself.”
(Jacques Maritain, d. 1973)
- b) As a science, it regulates the investigation of concepts and propositions in ways that enable one to arrive at a previously unknown proposition. Another definition is “the science that enables us to conclude from something that is known something that was previously unknown.”
(al-Ṭālib ibn al-Ḥājj al-Fāṣī, d. 1273/1856)
- c) “Logic may be defined as *the science that directs our mental operations* so that they proceed with order, facility, and consistency toward the attainment of truth. The mental operations referred to in this definition are the three basic acts of the intellect, namely, conception (or simple apprehension), judgment, and reasoning.” (Robert J. Kreyche)

2. Name (الاسم)

In most schools today, what was formerly known as Logic is now called “critical thinking.” In Arabic, Logic is known as *mantiq* because it contains three meanings: the ability to speak, the ability to comprehend universals, and the power of comprehension. Arabs chose this word (منطق) because Logic strengthens the first, enables the second to be more accurate, and endows perfection on the third. Imam al-Ghazālī called it “the touchstone of knowledge” (محكُ النَّظر) and also the “Criterion of knowledge” (معيار العلوم). It is also called “the key to knowledge” and “the balance” (الميزان) because the soundness of speech is measured by it; another name given to it is the “upright scale” based upon this Qur’anic verse (26:182): ﴿وَزِئْرُوا بِالْقِسْطَلَيْنِ الْمُسْتَقِيمَ﴾. Aristotle referred to it as Analytics (Prior and Posterior). It is also divided into Major (Material) and Minor (Formal) Logic, depending upon the subject matter. Formal Logic covers the validity or invalidity of the syllogism’s *form* and structure, while Material Logic covers the actual *content* of the syllogism.

The late Nineteenth Century witnessed the emergence of Symbolic or Mathematical Logic that over time eclipsed the two-thousand-year reign of traditional Logic. Today, Symbolic Logic dominates and is necessary in computer programming and, while useful, it can never replace traditional Logic which is still the basis of our legal system.

3. Subject (الموضوع)

The subject of Logic covers the three operations of the mind: conceptualization, judgment, and reasoning through argumentation or demonstration.

4. Benefit (الثمرة)

According to Imam al-Ghazālī (d. 504/1111), Logic is “an introduction to all knowledge, and the one who has not mastered it cannot be relied upon for his knowledge at all.” Its greatest benefit derives from the clarity of thought and sound reasoning skills it engenders in one trained in its art coupled with more effective oral and written communication.

5. Topics (المسائل)

The topics of Minor or Formal Logic consist of Simple Apprehensions, Concepts, Terms, Definitions, Divisions, Judgments, Propositions, and their varieties, such as Simple and Compound, Affirmative and Negative, Categorical, Hypothetical, and Modal, Opposition and Conversion, Reasoning, the Syllogism and its Divisions, and finally Induction.

Material or Major Logic deals with the contents of Syllogisms and involves Categories, the Five Predicables, the Five Arts, Logical Fallacies, and Topics. Related subjects are Dialectic, Rhetoric, Psychology, Cosmology, and Criticism.

6. Sources (الاستمداد)

Logic does not derive its sources from any other science. It is the singular introductory science, and its sources are observation and intuition. Logic’s basic tools are intuited concepts and the concomitant propositions that stem from them. Concepts involve the mind’s abstraction of universals from particulars, which enables definition. Propositions involve composing or separating concepts in a subject/predicate form upon which judgment is based.

These two operations of the mind are how we reason deductively or inductively in the third act of the mind: argument or demonstration. These three mental operations are the sources of Logic, which is essentially an analytical inquiry into these “acts of the mind,” which enable us to reason soundly and avoid the pitfalls common to an untrained mind. Its sources and foundations, such as the Laws of Identity, Non-Contradiction, and the Excluded Middle are rooted in self-evident truths – that is, any truth the opposite of which is impossible to conceive.

7. Founder (الواضع)

Reasoning is elemental to the human condition, and we are all gifted naturally with powers of reason that govern our actions. According to Muslim sources, Logic as a codified science was first developed by the ancients and remained latent, some claim hidden, until Aristotle (d. 322 BCE) recorded its rules, defined its terms, and revealed its secrets. Aristotle’s six books, known collectively as *The Organon*, are considered the first books on Logic and thus, he is arguably the founder and first teacher of Logic.

In the Islamic tradition, al-Farābī (d. 350/961), who is considered the second teacher, introduced Logic into Islamic civilization. Later, Ibn Sīnā (d. 428/1037) attempted to provide for the Muslim world what Aristotle did for the Hellenic civilization: an encyclopedic work covering logic, natural science, mathematics (the quadrivium), and metaphysics. The logic section of his book, *The Healing (al-Shifā')*, became the basis for Arabic Logic, which differs from Aristotelian Logic in some areas. After mastering Ibn Sīnā's work, Imam al-Ghazālī removed what he deemed any objectionable aspects of it and wrote five works of varying levels of difficulty for students of knowledge. All five are still in use.

8. Relationship to Other Sciences (نسبة)

Its relation to other sciences is that of a universal to a particular, as all other sciences are comprised of concepts, propositions, and arguments. As such, Logic is *sui generis*, although categorized among the arts known in the West as “Liberal” and in the Muslim world as “instrumental” (من علوم الآلة).

9. Virtue and Rank (فضله ، شرفه ، رتبته)

Given its universal benefit vis-à-vis other sciences, Logic is an overarching science. Its subject matter (concepts, propositions, and arguments) is integral to every other science. Hence, scholars have always considered it a necessary propaedeutic subject and a means to sound knowledge. While other sciences surpass Logic in rank, its supreme virtue is as a means that insures intellectual rigor in the pursuit of knowledge.

10. Legal Category (حكم الشارع)

The opinions of scholars can be categorized as those who consider the study of Logic 1) recommended, 2) permitted, 3) a collective obligation, or 4) prohibited.

The first opinion, recommended, is that of most theologians, legal theorists, and many of the jurists, including al-Ghazālī (according to one narration), Ibn ‘Arafah (d. 803/1400), al-Ubbī (d. 827/1423), and al-Sanūsī (d. 892/1486), and this is the soundest opinion according to most scholars.

The second opinion is that Logic is permissible for those whose intellect is sound, and who have knowledge of the Book and the Sunnah. This is the opinion of Taqī al-Dīn al-Subkī (d. 756/1355).

The third opinion is that it is an obligation. This is the opinion of al-Quṭub al-Taḥtānī (d. 766/1364) mentioned by al-Ajhūrī (d. 957/1550) and al-Zarqānī (d. 1122/1710) in the chapter on jihad in their commentaries on *al-Mukhtaṣar*.

Some argued that the obligation was individual because sound knowledge of God relies upon sound reasoning, and others said it was collective because the religion is made safe by protecting its beliefs, and that has to be done through the use of reason. This is the opinion of Imam al-Yūsī (d. 1060/1650) and of Imam al-Ghazālī in his *Iḥyā*.

The fourth opinion, held by such formidable scholars as Ibn Ṣalāḥ (d. 643/1245), al-Nawawī (d. 676/1300), al-Šuyūṭī (d. 911/1505), and Ibn Taymiyyah (d. 728/1327), is that preoccupation with Logic is prohibited.

However, our scholars concluded that what they were actually prohibiting was not Logic per se, but rather Philosophical Logic, specifically the metaphysical foundations of it and the false conclusions derived from them. On the contrary, Logic is none other than the “grammar of thought,” and recognizing its great utility in the arsenal of knowledge, our scholars codified it and purified it of any ungrounded epistemic speculations contained in Philosophical Logic. Furthermore, given that the cause of the prohibition was removed, the effect became null and void – the reason being that in a legal ruling, based upon scholastic opinion, a cause cannot be disassociated from an effect in its presence or in its absence. (العلة تدور مع المعلول وجوداً وعدماً).



INTRODUCTION TO LOGIC

قالَ الشَّيْخُ الْإِمَامُ أَفْضَلُ الْمُتَّخِرِّينَ، قُدُوْهُ الْحُكَمَاءُ الرَّاسِخِينَ أَثْيُرُ الدِّينِ الْأَبْهَرِيُّ، طَيَّبَ اللَّهُ ثَرَادُ، وَجَعَلَ
الْجَنَّةَ مَقْوَاهٌ: بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ تَحْمِدُ اللَّهُ عَلَى تَوْفِيقِهِ وَتَسْأَلُهُ هِدَىَّةً طَرِيقِهِ وَتُصَلِّي عَلَى مُحَمَّدٍ وَعَلَى
عِتْرَتِهِ أَجْمَعِينَ، أَمَّا بَعْدُ. فَهَذِهِ رِسَالَةُ فِي الْمُنْطَقِ أُورْدَنَا فِيهَا مَا يَحِبُّ اسْتِخْضَارُهَا لِمَنْ يَتَدَبَّرُ فِي شَيْءٍ
مِّنَ الْعُلُومِ مُسْتَعِينًا بِاللَّهِ إِنَّهُ مُفِيضُ الْخَيْرِ وَالْجُودِ.

The Shaykh, Imām Athīr al-Dīn al-Abhārī, the best of later scholars and exemplar of firmly-rooted logicians (may Allāh make his resting place pleasant and make Paradise his abode) states:

In the Name of Allāh, the Most Merciful, the Most Compassionate.
We praise Allāh [Most High] for His enablement of us to worship Him,
and we ask Him for guidance on His path. We send blessings upon
[our Master] Muḥammad ﷺ, and upon his family [Companions, and
followers]—all of them.

To proceed. This, then, is a treatise in [the science of] logic; we have placed therein all of which must be immediately accessible in one's mind for one who begins to study any of the religious sciences. We do so while seeking help from Allāh [Most High], for verily He is the Giver of goodness and generous gifts.

¹ Signification (*dalāla*) is of three types: (1) solely logical ('*aqlīyya*), (2) natural (*tabī'iyya* or '*ādiyya*), and (3) by formulation (*wad'iyya*). Each type can be nonverbal or verbal. The first type of signification refers to something signifying something else based on logic alone. Nonverbal examples include movement by volition signifying life; the movement of a hand signifying movement of a ring on its finger; or movement of a ship in the sea signifying movement of its passengers, based on its movement. A verbal example is a word indicating the person that said it, or the fact that he is alive. The second type of signification is not logical, but rather based on the "natural order" of things in creation, as Allāh Most High determines the creation to be, and is hence known empirically instead of logically. Nonverbal examples include medical signs and symptoms in a body, such

as fever, vomiting or diarrhea, signifying physical illness; a reddish complexion of one's face signifying shyness; or heavy rain signifying a fertile season. A verbal example is the word "ouch" signifying feeling pain. The third type of signification, that by formulation, is based on how people have formulated, or laid out, things or concepts. Nonverbal examples are the meanings signified by traffic lights or traffic signs (such as a red light signifying "stop," or green light "go"); school bells signifying class times; or nodding one's head signifying agreement. Verbal signification by formulation deals with language (i.e., words laid out by humans, or the Divine, to signify meanings), and is the only type of signification that is dealt with in this science, logic (Habannaka 26–7, Bājūrī 31). Hence, the present text begins with a discussion of it and its three subtypes, as delineated above.

Verbal Signification by Formulation (*Dalāla Lafzīyya Wad'iyya*)

A vocable (*lafz*) that signifies¹ [a meaning] by formulation indicates its entire meaning by complete accord (*muṭābaqa*); a part of its meaning—if it has a part—by partial accord (*taḍammun*); and that which is inextricably bound to it in the mind by concomitance (*iltizām*).

اللَّفْظُ الدَّالُّ بِالوَضْعِ يَدْلُّ عَلَى تَمَامِ مَا وُضِعَ لَهُ بِالْمُطَابَقَةِ، وَ عَلَى جُزْءِهِ بِالْتَّضْمُنِ إِنْ كَانَ لَهُ جُزْءٌ، وَ عَلَى مَا يُلَازِمُهُ فِي الدُّهْنِ بِالْإِلْتِزَامِ.

For example, [the vocable] “human” (*insān*) indicates [its entire meaning of] “a rational creature” (*hayawān nāṭiq*) by complete accord;² one of them [i.e., either “rational” or “creature”] by partial accord;³ and [the meaning] “receptive to knowledge and the skill of writing” by concomitance.⁴

Vocables and The Five Universals

ثُمَّ الْلَّفْظُ إِمَّا مُفْرَدٌ وَهُوَ الَّذِي لَا يُرَادُ بِالْجُزْءِ مِنْهُ دَلَالَةً عَلَى جُزْءِ الْمَعْنَى كَالْإِنْسَانِ، وَإِمَّا مُؤْلَفٌ وَهُوَ الَّذِي لَا يَكُونُ كَذِلِكَ كَرَامِي الْحِجَارَةِ.

A vocable (*lafz*) [that signifies meaning] is either singular (*mufrad*),⁵ namely, that which a part of it does not designate a part of its meaning, like “human”; or [it is] composite (*mu'allaf*), namely, the opposite, such as “one who casts stones” (*rāmī l-hijāra*).

² Any name of a species indicates a creature of that species by complete accord, such as “human,” “lion,” “bear,” etc. A Qur’ānic example would be “cow” in the verse, “Verily, Allāh commands you to sacrifice a cow” (2:67), which by complete accord indicates that well-known animal. Hence, any member of that species would have sufficed in fulfilling the divine mandate; however, the Children of Israel made the matter more difficult for themselves by asking for specification, and so Allāh responded by making the matter more difficult for them (Habannaka 28).

³ For example, if one sees a distant figure and asks, “Is that a creature or an inanimate object?” not seeking any other information, and we respond, “It is a human,” then “human” in our response is used to indicate the meaning “creature” by partial accord, as “creature” is part of the meaning of “human.” Another example is if a physician tells his patient, “You need more vitamins in your diet, so eat more fruits and uncooked vegetables,” whereby he informs the patient by partial accord that those foods naturally contain vitamins (Habannaka 29).

⁴ Concomitance refers to a quality customarily or logically associated with a word, yet not imbedded within its complete or partial meaning. For example, the meaning indicated by “human” is “rational creature,” yet the qualities of being “receptive to knowledge” or “able to write” are customarily associated with a human of sound senses and faculties. So if one asks, for example, “Is that creature receptive to knowledge and able to write?” and we respond, “It is a human,” then we have

used “human” to indicate those two qualities, which it does by concomitance.

Another example is “an even number,” which by concomitance indicates that it is divisible by two without a remainder, a quality logically associated with the term “even number.”

The indication of meaning by concomitance is a powerful tool in rhetoric and, therefore, used very often in the Qur’ān, such as for example, “If you pardon, overlook and forgive, then verily Allāh is All-Forgiving, Most Merciful” (64:14). The response, “Then verily Allāh is All-Forgiving, Most Merciful” indicates by concomitance that “Allāh will forgive you and have mercy on you if you pardon, overlook and forgive”; this meaning is not explicitly stated in the verse, yet it is implied by Allāh’s being All-Forgiving and Most Merciful, in that He would recompense those who pardon and forgive with His own mercy and forgiveness (Habannaka 31).

⁵ The comprehension of a singular vocable is termed *taṣawwur*, such as comprehending the person “Zaid.” Every nominal sentence is composed of four *taṣawwurs*: comprehension of the subject, comprehension of the predicate, comprehension of the ascription of the predicate to the subject, and the affirmation of that ascription; the latter *taṣawwur* is termed *taṣdiq*. For example, in the sentence “Zaid is standing,” the three *taṣawwurs* are “Zaid,” “standing,” and “the standing of Zaid,” while the *taṣdiq* is one’s “affirmation of the standing of Zaid” (Bājūrī 28, Damanhūrī 6).

وَالْمُفَرْدُ إِمَّا كُلُّهُ وَهُوَ الَّذِي لَا يَمْنَعُ نَفْسُ تَصْوِيرٍ مَفْهُومِهِ عَنْ وُقُوعِ الشَّرِكَةِ كَالإِنْسَانِ، وَإِمَّا حُزْنِيُّ وَهُوَ الَّذِي يَمْنَعُ نَفْسُ تَصْوِيرٍ مَفْهُومِهِ مِنْ ذَلِكَ كَرَيْدٍ.

A singular vocable is either a universal (*kullī*), namely, that which the very comprehension of its designated meaning does not prevent the occurrence of commonality therein [by instantiation], like “human”; or a particular (*juz̄ī*),⁶ namely, that which the very comprehension of its designated meaning does prevent that, like [the proper name] “Zaid.”⁷

وَالْكُلُّ إِمَّا ذَاتِيُّ وَهُوَ الَّذِي يَدْخُلُ فِي حَقِيقَةِ حُزْنِيَّاتِهِ كَالحَيَّانِ بِالنِّسْبَةِ إِلَى الإِنْسَانِ وَالْفَرَسِ، وَإِمَّا عَرَضِيُّ وَهُوَ الَّذِي يُخَالِفُهُ كَالضَّاحِكِ بِالنِّسْبَةِ إِلَى الإِنْسَانِ.

A universal is either essential (*dhātī*), namely, that which applies to the essence of its members, such as “creature” in relation to “human” or “horse”; or accidental (*‘aradī*), namely its contrast, such as “the one that laughs” in relation to “human.”

An essential universal (*dhātī*) is either:

إِمَّا مَقُولٌ فِي جَوَابِ مَا هُوَ بِحَسْبِ الشَّرِكَةِ الْمَحْضَةِ كَالحَيَّانِ بِالنِّسْبَةِ إِلَى الإِنْسَانِ وَالْفَرَسِ وَهُوَ الْجِنْسُ، وَيُرْسَمُ بِأَنَّهُ كُلُّ مَقُولٌ عَلَى كَثِيرِينَ مُخْتَلِفِينَ بِالْحَقَائِقِ فِي جَوَابِ مَا هُوَ.

- What is said in response to [the question] “What is it?”, based solely on shared members, such as “creature” in relation to “human” or “horse”; this is termed the genus (*jīns*). It can be described as “A universal that is said

Also, affirmation (*taṣdīq*) is either “certain” (*jāzīm*) or “uncertain” (*ghayr jāzīm*). The first is termed “knowledge” (*ilm*) if it cannot be changed, such as affirmation of a mountain being made of rock or affirmation that a human normally moves by volition; and is termed “belief” (*i’tiqād*) if it can be changed. Belief is either “sound” (*sahīh*) if it corresponds to reality, like the belief in divine oneness, or “unsound” (*fāsid*) if it does not, like the belief that the universe is preeternal. Uncertain affirmation is either “thought” or “opinion” (*zann*) if more likely to be true than its counterpart; “delusion” or “misgiving” (*wahm*) if less likely to be true; or “doubt” (*shakk*) if of equal likelihood (Akhdarī 25).

Additionally, that which leads to a comprehension (*taṣawwur*) is termed definiens (*qawl shāriḥi*), such as the definiens “rational creature,” which leads to the comprehension of “human”; while that which leads to an affirmation (*taṣdīq*) is termed syllogism (*qiyās* or *hujja*) (see below as well), such as the syllogism “The universe is changing, and everything that changes is of temporal origination,” which leads to the conclusion “The universe is of temporal origination” and its affirmation (Damanhūrī 6).

⁶ A universal (*kullī*) is a logical category; it can be applied to more than one singular entity, such as the words human, planet, or tree. A specific member of a category is termed a particular (*juz̄ī*), such as Zaid, Jupiter, or the tallest tree in a forest. A particular cannot be logically applied to more than one singular entity; the most common usage is with proper names.

For example, the name “Khalid” is designated to represent only a particular individual; it cannot be logically applied to another person, no matter how similar the two individuals are, as the role of a proper name is to distinguish one singular entity from all others. This would apply even if the other person’s name is also “Khalid,” because in reality, there are two proper names, each designated for a different individual, even if the two names are the same word. Each person was named with his own individual name so as to be distinct and distinguished from other persons, and it is a tangential and unsequential matter that their two names are identical; the primary purpose of naming was achieved (Habannaka 34–5).

⁷ The terms universal (*kullī*) and particular (*juz̄ī*) must be differentiated from terms that refer to an entire entity as a whole (*kull*), which allows for exceptions; a part of that whole (*juz'*); every member of a group (*kulliyā*), which normally does not allow for exceptions; or one or some members of a group (*juz'iyya*). An example of an entire entity as a whole (*kull*) is the statement, “The people of Azhar are scholars,” since as a whole they are, yet there are exceptions as some of them are not. An example of a part of a whole (*juz'*) is the thread of a carpet. A statement dealing with every member of a group (*kulliyā*) is “Every human is capable of understanding.” A statement dealing with some members of a group (*juz'iyya*) is “Some of the people of Azhar are scholars” (Damanhūrī 8).

in response to ‘What is it?’ yet refers to many members that differ in their essential realities;”⁸

وَإِمَّا مَقُولٌ فِي جَوَابِ مَا هُوَ بِحَسَبِ الشَّرِكَةِ وَالخُصُوصِيَّةِ مَعًا كَالإِنْسَانِ بِالنِّسْبَةِ إِلَى زَيْدٍ وَعَمْرٍ وَهُوَ التَّوْعُ، وَيُرْسَمُ بِأَنَّهُ كُلُّ مَقُولٌ عَلَى كَثِيرِينَ مُخْتَلِفِينَ بِالْعَدَدِ دُونَ الْحَقِيقَةِ فِي جَوَابِ مَا هُوَ.

- Or what is said in response to “What is it?”, based on both shared members as well as specificity, such as “human” in relation to “Zaid” and “Amr”; this is termed the species (*naw’*). It can be described as “A universal that is said in response to ‘What is it?’ and that refers to many members that differ in number, not in their essential reality;”⁹

وَإِمَّا غَيْرُ مَقُولٍ فِي جَوَابِ مَا هُوَ بَلْ مَقُولٌ فِي جَوَابِ أَيِّ شَيْءٍ هُوَ فِي ذَاتِهِ وَهُوَ الَّذِي يُمِيزُ الشَّيْءَ عَمَّا يُشارِكُهُ فِي الْجِنْسِ كَالنَّاطِقِ بِالنِّسْبَةِ إِلَى الإِنْسَانِ وَهُوَ الْفَصْلُ، وَيُرْسَمُ بِأَنَّهُ كُلُّ يُقَالُ عَلَى الشَّيْءِ فِي جَوَابِ أَيِّ شَيْءٍ هُوَ فِي ذَاتِهِ.

- Or not said in response to “What is it?” but rather said in response to “What thing is it, in its essence [i.e., essential reality]?” It is that [attribute] which [essentially] distinguishes a member from other members of its shared genus, such as “rational” in relation to “human”; this is termed the differentia (*fasl*). It can be described as “A universal that refers to something said in response to —What thing is it, in its essence?;”¹⁰

⁸ For example, “creature” (*hayawān*) is a genus since it is a universal that encompasses every essential nature (*māhiyya*) shared between multiple members that differ in their realities. That is, “creature” includes the human, horse, gazelle, and the rest of the animal kingdom, each animal differing from the rest in its own essential nature, since the complete essential nature of a human differs from that of a horse, which differs from that of a gazelle, etc. However, their essential natures have a shared component, namely, that they are all “creatures.” Each, therefore, can individually be called a “creature.”

The question “What is it?” in the definition above is used to ask regarding the essential nature (*māhiyya*) of a thing, i.e., its essential components that make up its reality, such as “being a creature” and “being rational” with respect to the human. Attributes of a thing that are not essential are termed “accidental” or “accidents,” meaning the thing can be logically conceived of without those traits, and still be what it is, regardless of whether those traits are inseparable or separable from that thing. For the human, these would include walking or laughing, for example (Habannaka 39-40). That is, a human being

can be logically conceived of without the qualities of walking or laughing, while still be considered a human being. However, a human cannot be logically conceived of without the qualities of being a creature or having the capacity to think rationally, while still being considered a human being.

Finally, there are three types of genus (*jins*): proximate (*qarib*), intermediate (*wasat*), and remote (*ba’id*). From the perspective of the human, the proximate genus is “creature” (*hayawān*), an intermediate genus is “that which grows” (*nāmī*), and a remote genus is “body” (*jism*) (Damanhūrī 8). The remoteness of a genus, then, refers to its being broader; “creature” encompasses other animals along with the human; “that which grows” encompasses plants, for example, as they are not creatures but do grow; and “body” encompasses inanimate objects that do not grow.

⁹ The species (*naw’*), then, is a member under the genus (*jins*); for example, the human is one species under the genus “creature,” the horse is another species under it, and the gazelle is a third species under it. Each animal is a species under the genus “creature.”

وَأَمَّا الْعَرَضِيُّ فِيمَا أَنْ يَمْتَنِعُ افِكَاكُهُ عَنِ الْمَاهِيَّةِ وَهُوَ الْعَرَضُ الْلَّازِمُ، أَوْ لَا يَمْتَنِعُ وَهُوَ الْعَرَضُ الْمُفَارِقُ.

As for an accidental universal ('aradī), it is either that which cannot be separated from its essential reality, namely, the inseparable accident ('araḍ lāzim); or that which can [be separated], namely, the separable accident ('araḍ mufāriq).

وَكُلُّ وَاحِدٍ مِنْهُمَا إِمَّا أَنْ يَخْتَصَ بِحَقِيقَةٍ وَاحِدَةٍ وَهُوَ الْخَاصَّةُ كَالضَّاحِكُ بِالْقُوَّةِ بِالنِّسْبَةِ إِلَى الْإِنْسَانِ، وَتُرْسَمُ بِأَنَّهَا كُلُّيَّةٌ تُقَالُ عَلَى مَا تَحْتَ حَقِيقَةٍ وَاحِدَةٍ فَقَطْ قَوْلًا عَرَضِيًّا.

Each of the two, then, is either specific to one essential reality, namely, the particular accident (*khāṣṣa*), such as “one who can potentially laugh” in relation to “human.” It can be described as “An accidental universal that refers to members of only one essential reality;”¹¹

وَإِمَّا أَنْ يُعْمَمْ حَقَائِقُ فَوْقَ وَاحِدَةٍ وَهُوَ الْعَرَضُ الْعَامُ كَالْمُتَنَفِّسُ بِالْقُوَّةِ وَبِالْفَعْلِ لِلْإِنْسَانِ وَغَيْرِهِ مِنَ الْحَيَّاَنَاتِ، وَيُرْسَمُ بِأَنَّهُ كُلُّيٌّ يُقَالُ عَلَى مَا تَحْتَ حَقَائِقٍ مُخْتَلِفَةٍ قَوْلًا عَرَضِيًّا.

Or general, encompassing multiple essential realities, not just one, namely, the common accident ('arad 'āmm), such as “one who can potentially breathe” or “who is actually breathing” in relation to “human” and other creatures [as well]. It can be described as “An accidental universal that refers to multiple differing essential realities.”¹²

With respect to the discussion of types of genus, one can appreciate that “genus” and “species” are to some degree relative terms, since “creature” and “plant” for example are “species” relative to the genus “that which grows,” yet each of the two species serves as a genus for each species below it. “Creature” is a genus for “human,” “horse,” “ghazelle,” etc., and “plant” is a genus for each type of plant categorized therein (Habannaka 40).

10 The differentia serves to differentiate each species from other ones within the same genus; so “rational” is the differentia for “human,” as by it the human is distinguished from all other animals under the genus “creature” (Habbanaka 40).

11 The particular accident is an accident, and hence not of the thing's essential reality, yet it is particular to it and therefore is not shared by any other species within the shared genus. For example, laughing is a particular accident of the human; it is not from the human's essential reality, as one can conceive of a human that cannot laugh, yet no other species under the genus “creature” has that trait, as no animal can laugh. Laughing, of course, emanates due to psychological wonder or enjoyment, and

does not merely refer to the resultant sound or facial expression; hence, apes do not laugh. Other examples of particular accidents of the human include being “receptive to knowledge and the skill of writing” (Habannaka 41).

12 The common accident is an accident and hence not part of something's essential reality, yet is common in that other species within the shared genus might possess that trait. For example, walking is an accident of the human, as one can conceive of a human that cannot walk, yet it is a common accident as other animals under the genus “creature” can also walk (Habannaka 41).

These, then, make up the five universals: genus (*jīns*), species (*naw'*), differentia (*faṣl*), particular accident (*khaṣṣa*), and common accident ('arad). Together, they are deemed the foundations of comprehension (*mabādi' al-taṣawwurāt*), in that one starts with the five universals and uses them to arrive at the end points of comprehension (*maqāṣid al-taṣawwurāt*), which is the definiens (*qawl shārīḥ*). Sound definiens then leads to sound comprehension (Damanhūrī 8-9).

Definiens (*Qawl Shāriḥ*)

الْحَدُّ قَوْلٌ دَالٌ عَلَى مَاهِيَّةِ الشَّيْءِ، وَهُوَ الَّذِي يَتَرَكَّبُ مِنْ جِنْسِ الشَّيْءِ وَفَصْلِهِ الْقَرِيبَيْنِ كَالْحَيَّانِ النَّاطِقِ
بِالنَّسْبَةِ إِلَى الْإِنْسَانِ، وَهُوَ الْحَدُّ التَّامُ.

A [formal] definition¹³ is a statement that indicates the essential nature (*māhiyya*) of something; it is composed of its proximate genus and its proximate differentia, such as “rational creature” in relation to “human.” This is a complete definition (*hadd tāmm*).¹⁴

وَالْحَدُّ النَّاقِصُ وَهُوَ الَّذِي يَتَرَكَّبُ مِنْ جِنْسٍ بَعِيدٍ لِلشَّيْءِ وَفَصْلِهِ الْقَرِيبِ كَالْجِسمِ النَّاطِقِ بِالنَّسْبَةِ إِلَى
الْإِنْسَانِ.

An incomplete definition (*hadd nāqis*) is composed of a remote genus of something and its proximate differentia,¹⁵ such as “rational body” in relation to “human.”

وَالرَّسْمُ التَّامُ وَهُوَ الَّذِي يَتَرَكَّبُ مِنْ جِنْسٍ قَرِيبٍ لِلشَّيْءِ وَخَواصِهِ الْلَّازِمَةِ كَالْحَيَّانِ الصَّاحِحِ فِي تَعْرِيفِ
الْإِنْسَانِ.

A complete description (*rasm tāmm*) of something is composed of its proximate genus and its inseparable particular accidents, such as “laughing creature” when defining [i.e., describing] “human.”¹⁶

¹³ This section is entitled “Definiens” (*qawl shāriḥ*) and represents the aim of the five universals. In Arabic, this is also termed *mu’arrif*, literally, that which gives you knowledge, or mental conception, of what something is and how it is distinguished from other things, as that is the purpose of definiens. This section is of the utmost importance in the science of logic, as most logical fallacies occur due to incorrect or invalid definitions, and most arguments occur due to implicitly using different definitions, or misunderstanding them in the first place.

There are some basic guidelines or rules for proper definiens, in that if they are not met, its purpose will not be fulfilled.

The first central rule is that the definiens not be broader or narrower than what it seeks to define, nor differ from it altogether. An example of definiens that is too broad is to define a human as “a creature,” as that causes the listener to envision things outside the scope of “human” in his resulting mental conception, such as horses, snakes, and eagles. An example of definiens that is too narrow is to define a creature as “a rational, sentient body that can move,” as that causes the listener to envision nothing but the human, while other animals which are creatures remain excluded. An example of definiens that differs altogether is to define a stone as “a flowing substance that quenches someone’s thirst,” or to define a human as “a neighing creature.” Rather, a proper definiens is an exact match of what is being defined, that is, inclusive (*jāmi’* or *mun’akis*) and restrictive (*māni’* or *muṭṭarid*).

The second central rule is that the definiens be clearer than what is being defined, rather than more or equally obscure. One cannot, for example, define *asad* (well-known Arabic word

for lion) to a non-Arab as *qaswara* (a more obscure, or equally obscure, word for lion).

A third central rule is that knowing the definiens not depend on knowing what is being defined, lest it lead to circular reasoning (*dawr*), such as defining knowledge as “perceiving something known,” since “something known” is assuming understanding of “knowledge,” which is what is being defined in the first place (Habannaka 59-61).

The above serve as the main rules; some other rules are that the definiens not be metaphorical, such as defining a scholar as an ocean that is gentle with people, unless there is something to indicate what exactly is meant, like defining him as an ocean that is gentle with people and that is precise in his explanation. Also, the definiens should not have a ruling, such as defining the ritual prayer as obligatory. Finally, a formal definition (*hadd*) should not have the word “or,” while a description (*rasm*) may use “or” (Akhdarī 29, Bājūrī 45, Damanhūrī 9).

¹⁴ A formal definition (*hadd, pl. hudūd*) is composed only of essential universals, while a description (*rasm, pl. rusūm*) is composed of only accidental universals, or of the genus and accidental universals, but never with the differentia. The order of most to least ideal types of definitions is the same as presented in the text above, namely, complete definition, incomplete definition, complete description, and incomplete description (Habannaka 62-3).

The complete definition is most ideal as it is most inclusive and restrictive of all definitions, since it is composed of the proximate genus and the proximate differentia, such as “rational creature” to define “human.” If a more remote genus is used, such

وَالرَّسْمُ النَّاقِصُ وَهُوَ الَّذِي يَتَرَكَّبُ مِنْ عَرَضِيَّاتٍ تَخْتَصُّ جُمْلَتُهَا بِحَقِيقَةٍ وَاحِدَةٍ كَقَوْلَنَا فِي تَعْرِيفِ الْإِنْسَانِ إِنَّهُ مَاشٍ عَلَى قَدَمِيهِ، عَرِيضٌ الْأَظْفَارِ، بَادِيُ الْبَشَرَةِ، مُسْتَقِيمُ الْقَامَةِ، ضَحَّاكٌ بِالْطَّبْعِ.

An incomplete description (*rasm nāqīṣ*) is composed of accidents, all of which being specific to one essential reality, like our statement when defining [i.e., describing] “human”—“He is one who walks on two feet; has flat nails, apparent skin, and an upright stature; and laughs by nature.”¹⁷

Propositions (*Qadāyā*)

الْقَضِيَّةُ قَوْلٌ يَصْحُّ أَنْ يُقَالَ لِقَائِلِهِ إِنَّهُ صَادِقٌ فِيهِ أَوْ كَاذِبٌ فِيهِ. وَهِيَ إِمَّا حَمْلِيَّةٌ كَقَوْلَنَا زَيْدٌ كَاتِبٌ أَوْ زَيْدٌ لَيْسَ بِكَاتِبٍ، وَإِمَّا شَرْطِيَّةٌ مُتَّصِّلَةٌ كَقَوْلَنَا إِنْ كَانَتِ الشَّمْسُ طَالِعَةً فَالنَّهَارُ مَوْجُودٌ، وَإِمَّا شَرْطِيَّةٌ مُنْفَصِّلَةٌ كَقَوْلَنَا الْعَدَدُ إِمَّا زَوْجٌ وَإِمَّا فَرْدٌ.

A proposition¹⁸ is a statement that can be affirmed as being true or false.¹⁹

It is either:

- Categorical (*hamliyya*), like our statement, “Zaid is a writer” or “Zaid is not a writer;” or
- Conjunctive Conditional (*shartiyya muttaṣila*), like our statement, “If the sun has risen, then daylight is present;” or

as “that which grows” or “body,” then it is not fully restrictive. The same applies if a more remote differentia is used, such as “sentient,” as all animals are included thereby (Ḥabannaka 64).

¹⁵ Or composed of its proximate differentia alone, such as “one who is rational” in relation to “human.”

¹⁶ It would therefore not be valid to use a common accident, such as “walking” for “human,” as other animals under the genus “creature” walk as well. Likewise, a separable particular accident cannot be used, such as “one who actually laughs” for “human,” as such a trait is separable since some humans are not able to laugh; rather, “one who could potentially laugh,” is valid as it includes all humans, since those who cannot laugh could potentially do so were it not for their impediments. Another example of a valid complete description is “an eating body that grows” for “creature,” as “body that grows” is its proximate genus, and “eating” is an inseparable particular accident (Ḥabannaka 65).

¹⁷ The incomplete description of something can use either its inseparable particular accidents alone, like “one who could potentially laugh” or “one who is receptive to knowledge and the skill of writing” for “human”; or with its remote genus, like “a body that could potentially laugh” for “human”; or with its common accidents, or simply many accidents that together are particular to its reality, like the example above in the text (Habannaka 66).

A fifth way of defining something is with a more well-known synonym (*ta’rif bi l-lafz*), such as defining *ghadānfar* (an obscure word for “lion”) as *asad* (a well-known word for “lion”) (Akhḍarī 28, Damanhūrī 8-9).

A sixth way is to define something with an example (*ta’rif bi l-mithāl*), such as defining a “noun” as “that which resembles the words Zaid, man, or who,” or like defining a “verb” as “that which resembles the words heard, say, or take.”

A seventh way is to define something by categorization (*ta’rif bi l-taqṣīm*), such as the way a “word” is defined in books of Arabic grammar, namely, “noun, verb, and particle,” or like defining a “number” as “either even or odd.”

These last three types of defining something are considered general descriptions (*rusūm*), not formal definitions (*hudūd*) (Ḥabannaka 63, 66-7).

¹⁸ Propositions and their related rulings are deemed the foundations of affirmation (*mabādī’ al-taṣdīqāt*), in that one starts with propositions and uses them to arrive at the end points of affirmation (*maqāṣid al-taṣdīqāt*), which are syllogisms (*sing. qiyās*). Sound syllogisms then lead to sound affirmation (Damanhūrī 9, 12).

¹⁹ That is, in and of itself, without consideration given to other factors. Hence, even statements that are decisively true or false for extraneous reasons are deemed propositions in logic. For example, statements by Allāh Most High or His Messenger ﷺ are included, despite being absolutely true, since they are true because of the speaker; the statement itself—as a statement—can be affirmed as false if no consideration is given to the speaker. Likewise, a statement like “One is half of eight,” is a proposition in logic despite being obviously false, since it is false due to an extraneous factor in that it contradicts intuitive reasoning, not in and of itself as a statement (Damanhūrī 9-10). Propositions include only declarative statements (*jumla*

- Disjunctive Conditional (*shartiyya munfaṣila*), like our statement, “A number is either even or odd.”

وَالْجُزْءُ الْأَوَّلُ مِنَ الْحَمْلَيَةِ يُسَمَّى مَوْضُوعًا وَالثَّانِي مَحْمُولًا. وَالْجُزْءُ الْأَوَّلُ مِنَ الشَّرْطِيَّةِ يُسَمَّى مُقَدَّمًا وَالثَّانِي تَالِيًا.

The first part of a categorical proposition is termed the subject (*mawḍū‘*), and the second [part is termed] the predicate (*maḥmūl*).

The first part of a conditional proposition is termed the antecedent (*muqaddam*), and the second [part is termed] the consequent (*tālī*).

وَالْقَضِيَّةُ إِمَّا مُوجَّهٌ كَقَوْلَنَا زَيْدٌ كَاتِبٌ، وَإِمَّا سَالِبَةٌ كَقَوْلَنَا زَيْدٌ لَيْسَ بِكَاتِبٍ.

A proposition is either affirmative (*mūjaba*), like our statement, “Zaid is a writer;” or negative (*sāliba*), like our statement, “Zaid is not a writer.”²⁰

وَكُلُّ وَاحِدَةٍ مِنْهُمَا إِمَّا مَخْصُوصَةٌ كَمَا ذَكَرْنَا، وَإِمَّا كُلُّيَّةٌ مُسَوَّرَةٌ كَقَوْلَنَا كُلُّ إِنْسَانٍ كَاتِبٌ، وَلَا شَيْءٌ مِنَ الْإِنْسَانِ بِكَاتِبٍ، وَإِمَّا جُزِيَّةٌ مُسَوَّرَةٌ كَقَوْلَنَا بَعْضُ الْإِنْسَانِ كَاتِبٌ، وَبَعْضُ الْإِنْسَانِ لَيْسَ بِكَاتِبٍ، وَإِمَّا أَنْ لَا يَكُونَ كَذِيلَكَ وَتُسَمَّى مُهْمَلَةً كَقَوْلَنَا الْإِنْسَانُ كَاتِبٌ وَالْإِنْسَانُ لَيْسَ بِكَاتِبٍ.

khabariyya), not affective statements (*jumla inshā‘iyya*) such as commands, prohibitions, and the like. For example, statements like “Give me my lunch,” or “Do not take my money,” are not propositions, as they cannot be affirmed as true or false in the first place (Habannaka 68).

²⁰ This aspect of a proposition is referred to as its qualitative component (*kayf*), namely, whether it is affirmative or negative. The next discussion in the text deals with its quantitative component (*kamm*), namely, the number of individuals or entities the proposition deals with in its ruling (Habannaka 69).

²¹ The word used in Arabic is *ba‘d*, which here refers to one or more members of a group (Bājūrī 42). So even though “some” is English implies plurality, “particularity” in propositions refers to one member or more.

²² An indeterminate proposition (*muhmala*) is effectively a particular determinate proposition (*juz’iyya*), since one assumes the least possible quantity indicated (Habbanaka 70). For example with regards to the proposition “The human is a writer,” it would hold true if merely some humans were writers; it is not necessary for all humans to be writers for the statement to be true, even though in reality all humans might very well be writers. Hence, one assumes the least possible quantity when assessing a proposition, which in the case of an indeterminate proposition would be its equivalent particular determinate proposition.

²³ Hence, there are a total of eight possible categorical propositions. The following is a list with examples:

- Affirmative singular: Muḥammad ﷺ is the Messenger of Allāh; Imāms Bukhārī and Muslim relate sound narrations;

The four rightly-guided caliphs are the elite of the Companions.

- Negative singular: Musaylima is not a messenger; The black stone brings no benefit nor harm; “That is the book—there is no doubt therein” (Qur’ān 2:2).
- Affirmative universal: “Everything therein shall perish” (Qur’ān 55:26); “Every soul shall taste death” (Qur’ān 21:35); “Every soul is held as collateral for what it earns” (Qur’ān 74:38); “Everything, with Him, is fully measured” (Qur’ān 13:8).
- Negative universal: Nothing of stone is a human; There is no partner with Allāh; Allāh has no child or spouse whatsoever; “Neither slumber nor sleep overtakes Him” (Qur’ān 2:255).
- Affirmative particular: “A group will be in Paradise, and a group will be in the Inferno” (Qur’ān 42:7); “So of them are those who crawl on their bellies, and of them are those who walk on two legs, and of them are those who walk on [all] four” (Qur’ān 24:45); “And from among the People of the Book is he who, were you to entrust him with an entire treasure, would return it to you” (Qur’ān 3:75); “And of mankind are some who take besides Allāh equals” (Qur’ān 2:165); “And so few of My servants are of much gratitude” (Qur’ān 34:13).
- Negative particular: “Most people, however, do not show gratitude” (Qur’ān 12:38); “Nor do some of them follow the qibla of others” (Qur’ān 2:145); “And of them is he who, were you to entrust him with [even] one gold coin, would not return it to you” (Qur’ān 3:75); “And most people, even were you to be very avid, will not believe” (Qur’ān 12:103).
- Affirmative indeterminate: This is effectively an affirmative, particular proposition. For example, the statement “Humans eat beef” is akin to saying “Some humans eat beef;” or “Fools

Each one of the two is then either singular (*makhsūṣa*) [or *shakhṣiyya*] as we have mentioned; or universal determinate (*kulliyya musawwara*), like our statement, “Every human is a writer,” or “No human is a writer;” or particular determinate (*juz'yya musawwara*),²¹ like our statement, “Some humans are writers,” or “Some humans are not writers;” or other than that, which is termed indeterminate (*muhmala*),²² like our statement, “The human is a writer,” or “The human is not a writer.”²³

وَالْمُتَّصِّلَةُ إِمَّا لُزُومِيَّةٌ كَقَوْلَنَا إِنْ كَانَتِ الشَّمْسُ طَالِعَةً فَالنَّهَارُ مَوْجُودٌ، وَإِمَّا اِتْفَاقِيَّةٌ كَقَوْلَنَا إِنْ كَانَ الْإِنْسَانُ نَاطِقًا فَالْجِمَارُ نَاهِقٌ.

The conjunctive conditional proposition²⁴ is either mandatory (*luzūmiyya*), like our statement, “If the sun has risen, then daylight is present;” or coincidental (*ittifāqiyah*), like our statement, “If a human is rational, then a donkey brays.”²⁵

وَالْمُنْفَصِّلَةُ إِمَّا حَقِيقِيَّةٌ كَقَوْلَنَا الْعَدَدُ إِمَّا زَوْجٌ وَإِمَّا فَرْدٌ، وَهِيَ مَانِعَةُ الْجَمْعِ وَالْخُلُوِّ مَعًا، وَ[إِمَّا] مَانِعَةُ الْجَمْعِ فَقَطْ كَقَوْلَنَا هَذَا الشَّيْءُ إِمَّا حَجَرٌ أَوْ شَجَرٌ، وَإِمَّا مَانِعَةُ الْخُلُوِّ فَقَطْ كَقَوْلَنَا زَيْدٌ إِمَّا أَنْ يَكُونَ فِي الْبَحْرِ وَإِمَّا أَنْ لَا يَعْرَقَ.

The disjunctive conditional proposition is either: literal (*haqīqiyya*),²⁶ like our statement, “A number is either even or odd.” This is [also called] mutually exclusive and totally exhaustive (*māni'at al-jam' wal-khuluww ma'an*); [or it is] mutually exclusive only (*māni'at al-jam' faqat*), like our statement, “This thing is either a stone or a tree;”²⁷ or [it is] totally exhaustive only (*māni'at al-khuluww faqat*), like our statement, “Zaid is either in a body of water, or is not drowning.”²⁸

among people will say, —What has turned them from the qibla that they were upon beforehand?” (Qur’ān 2:142) is akin to “Some fools among people...”; or “Verily, people have gathered against you” (Qur’ān 3:173) is akin to “Some people have gathered...”; or “And the people of Nūh—when they denied the messengers, We drowned them” (Qur’ān 25:37) is akin to “And some of the people of Nūh...”

- Negative indeterminate: This is effectively a negative, particular proposition. For example, the statement “Humans do not ride cows” is akin to saying “Some humans do not ride cows;” or “People that can swim do not drown” is akin to “Some people that can swim do not drown;” or “The human does not become weary from asking of good” (Qur’ān 41:49) is akin to “Some humans do not become weary...” (Habannaka 83-5).

24 Examples from the Qur’ān include the following:

- “And when the Qur’ān is recited to them, they do not prostrate” (84:21);
- “Every time they ignite the fire of war, Allāh puts it out” (5:64);
- “Had there been therein gods besides Allāh, they both (the heavens and the earth) would have been disordered” (21:22);
- “And if all the trees in the earth were pens, and the sea, with seven more seas to help it, (were ink), the words of Allāh would not be exhausted” (31:27);
- “And they said, —Whatever sign you bring to us, so as to bewitch us thereby, we shall never believe in you.” (7:132);
- “And were it not for the fact that all of mankind would have been united as one (evil) community, We would have made for whoever disbelieves in the All-Merciful silver roofs for their

houses, and (silver) stairways upon which they could ascend” (43:33) (Habannaka 88-90).

25 A mandatory conjunctive conditional proposition simply means that the consequent is a logically bound to the antecedent, such as “If Zaid is Khalid’s son, then Khalid is Zaid’s father;” while a coincidental conjunctive conditional proposition means the two are logically unrelated, but rather just happen to coincide, such as “If Abū Ḥanīfa is a jurist, then Bukhārī is a ḥadīth specialist” (Habannaka 93-5).

26 This is termed literal as it is the most specific of the three types and hence is most deserving of being termed “disjunctive” (Damanhūrī 10-11).

It is mutually exclusive in that both or all options cannot be simultaneously true; it is also totally exhaustive, in that the ruling must necessarily apply to one of the options as no other possibility is valid. Examples include “A thing is either existent or nonexistent;” “A physical entity is either moving or still;” “The height of a tree is either more than, equal to, or less than three

meters;” “The temperature is either more than, equal to, or less than zero degrees;” and from the Qur’ān, “Verily We have shown him the way; he is then either grateful, or an utter ingrate” (76:3) (Habannaka 97-8).

27 This type of disjunctive conditional proposition is only mutually exclusive, in that both or all options cannot be simultaneously true, yet it is not totally exhaustive, such that neither option is valid but rather another option is valid. An example is “The moon is either larger than or equal in size to the earth,” as another possibly valid option exists, namely, that it is smaller than the earth (which is true) (Habannaka 99).

وَقَدْ تَكُونُ الْمُنْفَصِلَاتُ دَوَاتٍ أَجْزَاءٍ ثَلَاثَةٍ [أَوْ أَكْثَرَ] كَقَوْلَنَا الْعَدَدُ إِمَّا زَائِدٌ أَوْ نَاقِصٌ أَوْ مُسَاوٍ.

The [aforementioned three types of] disjunctive propositions could be made up of three [or more] parts [rather than just two], like our statement, “The number is either greater than, less than, or equal to.”

Contradiction (*Tanāqud*)

وَهُوَ اخْتِلَافُ الْقَضِيَّيْنِ بِالِإِيجَابِ وَالْسَّلْبِ بِحِيثُ يَقْتَضِي لِذَاهِهِ أَنْ تَكُونَ إِحْدَاهُمَا صَادِقَةً وَالْأُخْرَى كَاذِبَةً، كَقَوْلَنَا زَيْدٌ كَاتِبٌ، زَيْدٌ لَيْسَ بِكَاتِبٍ. وَلَا يَتَحَقَّقُ ذَلِكَ إِلَّا بَعْدَ اتْفَاقِهِمَا فِي الْمَوْضُوعِ وَالْمَحْمُولِ وَالزَّمَانِ وَالْمَكَانِ وَالإِضَافَةِ وَالْقُوَّةِ وَالْفِعْلِ وَالْكُلِّ وَالْجُزْءِ وَالشَّرْطِ.

It is the difference of two propositions in affirmation or negation, such that in and of itself one of the two must be true and the other [must be] false,²⁹ like our statement, “Zaid is a writer; Zaid is not a writer.”

This does not occur unless they both correspond in subject, predicate, time, place, relation, potentiality, actuality, whole, part, and condition.³⁰

فَنَقِيضُ الْمُوجَبَةِ الْكُلُّيَّةِ إِنَّمَا هُوَ السَّالِبَةُ الْجُزُّيَّةُ كَقَوْلَنَا كُلُّ إِنْسَانٍ حَيَوَانٌ، بَعْضُ الْإِنْسَانِ لَيْسَ بِحَيَوَانٍ. وَنَقِيضُ السَّالِبَةِ الْكُلُّيَّةِ إِنَّمَا هُوَ الْمُوجَبَةُ الْجُزُّيَّةُ كَقَوْلَنَا لَا شَيْءٌ مِنَ الْإِنْسَانِ بِحَيَوَانٍ، بَعْضُ الْإِنْسَانِ حَيَوَانٍ.

²⁸ This third type of disjunctive conditional proposition is only totally exhaustive, in that the ruling must necessarily apply to one of the options as no other possibility is valid, yet is not mutually exclusive, as both or all options could be simultaneously true. For example, “A righteous person that one keeps company with is like the seller of musk—he will either allow you to wear some, or sell some to you, or you will [at least] inhale a pleasant scent from him.” One of these options will necessarily occur, yet any two or even all three could occur as well (Habannaka 99-100).

²⁹ This principle is the basis of contradiction—both contradictory propositions cannot conceivably be true, nor both false; rather, one alone must be true, and the other must be false (Habannaka 156).

³⁰ For a singular proposition (makhṣūṣa or shakhṣiyya), contradiction is valid only if the two propositions differ only in the qualitative component (kayf), i.e., affirmation versus negation; they must correspond in all other aspects, conditions, and stipulations, as stated above (Habannaka 157). For example, “Zaid is a writer; Zaid is not a writer,” would be contradictory assuming all other aspects were

the same. However, if the first proposition referred to the writing of English, while the second one referred to the writing of Arabic, then both could be true, or both could be false, and hence would not be contradictory propositions.

Another example is the verse in the Qur’ān (34:3), “And the disbelievers say, —The hour will not come upon us.|| Say: No! indeed by my Lord, it will come upon you.” The first proposition is negative, singular; the second one is affirmative, singular. Both

correspond in every aspect and perspective, differing only in the qualitative component (kayf). Hence, the two are contradictory; one must be true, and the other false. So after the verse quotes the disbelievers|| proposition, Allāh responds immediately with “No!” (balā) to indicate that theirs is false. He then follows it with its contradictory proposition, which must therefore be true, namely, that the Hour will surely come upon them. He Most High also emphasizes its veracity further with an oath, “By my Lord!”

This differs from the following verse: “So you killed them not, yet Allāh killed them. And you threw not when you threw, but rather Allāh Himself threw” (Qur’ān 8:17). There is no contradiction here between the negation of the Messenger||s throwing “And you threw not” and its affirmation “when you threw,” as the first proposition deals with the perspective of the effect of the throw, namely, death, while the second proposition deals with the act itself and its form, namely, the actual throwing (Habannaka 158–60).

³¹ With respect to determinate propositions, contradiction is not valid by the reversal of the qualitative component (kayf) alone. For example, “Every creature is a human” is an affirmative, universal proposition that is false. If one reversed its qualitative component alone, it would become the negative, universal proposition “No creature is human.” This statement is also false, and therefore cannot be the contradictory proposition of the first statement. Rather, one must reverse its quantitative component (kamm) as well, so as to become the negative, particular proposition “Some creatures are not human,” which is a true statement, and hence the contradictory proposition of the first statement.

This does not preclude the fact that sometimes a reversal of

Hence, the contradictory proposition of an affirmative, universal proposition (*mūjaba kulliyya*) is only a negative, particular proposition (*sāliba juz'iyya*), like our statement, “Every human is a creature; Some humans are not creatures.”³¹

The contradictory proposition of a negative universal proposition (*sāliba kulliyya*) is only an affirmative particular proposition (*mūjaba juz'iyya*),³² like our statement, “No human is a creature; Some humans are creatures.”

وَالْمَحْصُورَتَانِ لَا يَتَحَقَّقُ التَّنَاقُضُ بَيْنُهُمَا إِلَّا بَعْدَ اخْتِلَافِهِمَا فِي الْكَمْمَيَةِ لَأَنَّ الْكَلْتَيْتَيْنِ قَدْ تَكَذِّبَانِ كَقَوْلَنَا كُلُّ إِنْسَانٍ كَاتِبٌ، وَلَا شَيْءٌ مِنَ الْإِنْسَانِ بَكَاتِبٍ، وَالْجُزْئَيْتَيْتَيْنِ قَدْ تَصْدِقَانِ كَقَوْلَنَا بَعْضُ الْإِنْسَانِ كَاتِبٌ، بَعْضُ الْإِنْسَانِ لَيْسَ بَكَاتِبٍ.

Two determinate propositions [with quantifiers] cannot be mutually contradictory unless they differ in quantity, for two universal propositions could both be false, like our statement, “Every human is a writer; No human is a writer;” and two particular propositions could both be true, like our statement, “Some humans are writers; Some humans are not writers.”

Conversion (*Aks*)

وَهُوَ أَنْ يَصِيرَ الْمَوْضُوعُ مَحْمُولاً وَالْمَحْمُولُ مَوْضُوعاً مَعَ بَقَاءِ الْإِيجَابِ وَالسَّلْبِ بِحَالِهِ وَالْتَّصْدِيقِ وَالْتَّكَذِيبِ بِحَالِهِ.

It is for the subject to become a predicate, and the predicate a subject, while retaining its original negation or affirmation, and truthfulness or falsehood.³³

the qualitative component (*kayf*) alone might result in one true proposition and one false one, such as “Every human is a creature” and “No human is a creature.” Yet this occurs only because the predicate of the first statement is more general than its subject, and cannot be used to extrapolate a general rule of contradiction that can be consistently applied to all affirmative, universal propositions, as proven by the previous example (in which the reversal of the qualitative component alone did not result in contradiction).

Likewise, for a negative, universal proposition such as “No creature is a human,” contradiction does not occur by reversing the qualitative component alone, as that would result in “Every creature is a human,” both statements being false. Rather, one must also reverse the quantitative component (*kamm*), resulting in “Some creatures are human,” which is true and hence contradictory to the original false proposition.

Therefore, contradiction is not valid between two affirmative propositions; two negative propositions; two universal propositions; two particular propositions; nor if any aspect differs between the two propositions, such as subject, predicate, time, place, state, object, potentiality, condition, stipulation, wholeness, partiality, relativity, etc.

Finally, contradiction is very useful in establishing a proof—by affirming the falsehood of its contradictory proposition—or in disproving a false claim—by affirming the truthfulness of its contradictory proposition (Ḥabannaka 162–7).

³² An indeterminate proposition (*muhmala*) is effectively a particular determinate proposition (*juz'iyya*) (see related note, page ???). Therefore, the contradictory proposition of “The

human is a creature” (*muhmala mūjaba*) is also “No human is a creature” (*sāliba kulliyya*) (Damanhūrī 11).

³³ The underlying principle of conversion is that truthfulness or falsehood must be retained; otherwise, the conversion is not valid.

If both the subject and predicate of a proposition are singular, then conversion is valid by switching the subject and predicate alone, while retaining both its qualitative and quantitative components (*kayf* and *kamm*). For example, “Abū Ḥafṣ is ‘Umar” converts to “‘Umar is Abū Ḥafṣ,” and “Zaid is not ‘Amr” converts to “‘Amr is not Zaid.”

All affirmative propositions convert to affirmative particular propositions, regardless of whether the original statement is universal, particular, indeterminate, or singular (unless both the subject and predicate are singular, as just discussed).

Examples are as follows:

- Affirmative universal “Every human is a creature” converts to affirmative particular “Some creatures are human,” since were it to remain universal it would be “Every creature is human,” which is not true like the original statement.
- Affirmative particular “Some plants are edible” converts to affirmative particular “Some edible things are plants.”
- Affirmative indeterminate “The bird is a creature” converts to affirmative particular “Some creatures are birds.”
- Affirmative singular “Imām Shāfi‘ī is a renowned jurist” converts to affirmative particular “Of the renowned jurists is Imām Shāfi‘ī.”

وَالْمُوْجَبَةُ الْكُلْيَّةُ لَا تَنْعَكِسُ كُلْيَّةً إِذْ يَصْدُقُ قَوْلُنَا كُلَّ إِنْسَانٍ حَيَّاً. وَلَمْ يَصْدُقْ كُلَّ حَيَّاً إِنْسَانٍ بَلْ تَنْعَكِسُ جُزْئَيْةً لِأَنَّا إِذَا قُلْنَا كُلَّ إِنْسَانٍ حَيَّاً يَصْدُقُ بَعْضُ الْحَيَّاَنِ إِنْسَانٌ، فَإِنَّا نَجِدُ شَيْئًا مَوْصُوفًا بِالْإِنْسَانِ وَالْحَيَّاَنِ فَيَكُونُ بَعْضُ الْحَيَّاَنِ إِنْسَانًا.

An affirmative universal proposition (*mūjaba kulliyya*) does not convert to a universal, since our statement, “Every human is a creature,” is true, while “Every creature is a human,” is not true; rather, it converts to a particular (*juz'iyya*), since when we say, “Every human is a creature,” the statement “Some creatures are human,” is true, for indeed we find a thing described as being a human and a creature, such that some creatures are humans.

وَالْمُوْجَبَةُ الْجُزْئَيْةُ أَيْضًا تَنْعَكِسُ جُزْئَيْةً بِهَذِهِ الْحُجَّةِ. وَالسَّالِبَةُ الْكُلْيَّةُ تَنْعَكِسُ [سَالِبَةً] كُلْيَّةً، وَذَلِكَ بَيْنَ بَنْفَسِهِ فَإِنَّهُ إِذَا صَدَقَ لَا شَيْءَ مِنَ الْإِنْسَانِ بِحَجَرٍ، صَدَقَ قَوْلُنَا لَا شَيْءَ مِنَ الْحَجَرِ يَإِنْسَانٌ.

Likewise, an affirmative particular proposition (*mūjaba juz'iyya*) converts to a particular (*juz'iyya*) by this proof, and a negative universal proposition (*sāliba kulliyya*) converts to a [negative] universal (*sāliba kulliyya*). This is evident in and of itself, since if “No human is a stone,” is true, then our statement “No stone is a human,” is true.

Negative universal propositions convert to negative universal propositions. For example, “No Muslim denies the message of Muḥammad” converts to “No one who denies the message of Muḥammad is Muslim.” Likewise, “Nothing of fornication is permissible” converts to “Nothing permissible is from fornication.”

Negative singular propositions (whose predicates are not also singular) also convert to negative universal propositions. For example, “Khalid is not a coward” converts to “No coward is Khalid” (Habannaka 178–81).

³⁴ The same ruling applies to an indeterminate proposition (*muḥmala*), as it is effectively a particular determinate proposition (*juz'iyya*). Hence, “A creature is not a human,” which can be true, has no converse, as “A human is not a creature,” cannot be true (Damanhūrī 11–12).

وَالسَّالِبَةُ الْجُزِئِيَّةُ لَا عَكْسَ لَهَا لُزُومًا، لِأَنَّهُ يَصُدُّ قَوْلَنَا بَعْضُ الْحَيَوانِ لَيْسَ بِإِنْسَانٍ، وَلَا يَصُدُّ عَكْسَهُ.

A negative particular proposition (*sāliba juz'iyya*)³⁴ has no necessary converse, for indeed “Some creatures are not human,” is true, while its conversion [i.e., some humans are not creatures] is not true.

Syllogism (*Qiyās*)

هُوَ قَوْلٌ [مَفْوُظٌ أَوْ مَعْقُولٌ] مُؤَلَّفٌ مِنْ أَقْوَالٍ مَتَى سُلِّمَتْ لَزِمَّ عَنْهَا لِذَاتِهَا قَوْلٌ آخَرُ.
وَهُوَ إِمَّا اقْتِرَانٌ كَقَوْلِنَا كُلُّ جِسْمٍ مُؤَلَّفٌ وَكُلُّ مُؤَلَّفٍ مُحْدَثٌ فَكُلُّ جِسْمٍ مُحْدَثٌ، وَإِمَّا اسْتِنَائٌ كَقَوْلِنَا
إِنْ كَانَتِ الشَّمْسُ طَالِعَةً فَالنَّهَارُ مَوْجُودٌ لِكِنِ الشَّمْسُ طَالِعَةٌ فَالنَّهَارُ مَوْجُودٌ وَكَقَوْلِنَا إِنْ كَانَتِ الشَّمْسُ
طَالِعَةً فَالنَّهَارُ مَوْجُودٌ لِكِنِ النَّهَارُ لَيْسَ بِمَوْجُودٍ فَالشَّمْسُ لَيْسَ بِطَالِعَةٍ.

It is a [verbally uttered or mentally comprehended] inference composed of statements [i.e., propositions] that, if conceded, in and of themselves³⁵ [necessarily] give rise to a third statement [i.e., the conclusion].

It is either by coupling (*iqtirānī*), like our statement, “Every physical body is composed, and every composed thing is originated; hence, every physical body is originated;” or by exclusion (*istithnā'ī*), like our statement, “If the sun has risen, then daylight is present. And indeed the sun has risen; hence, daylight is present,” or like our statement, “If the sun has risen, then daylight is present. However, daylight is not present; hence, the sun has not risen.”³⁶

³⁵ That is, a valid syllogism necessarily results in a conclusion due to no extraneous consideration or evidence, but rather in and of itself, based on its form and mood alone (Habannaka 228).

³⁶ A syllogism by coupling is distinct in that the two premises are coupled by the conjunction “and.” Also, its conclusion is potentially embedded within its two premises, but not actually present (see above example). A syllogism by exclusion is distinct

in that there is a particle of exclusion, or exception, between its two premises, namely, “however” or “and indeed.” Also, its conclusion (or the contradictory proposition of its conclusion) exists in actuality within the two premises, the only difference being that its ruling in the premise is conditional, while its ruling in the conclusion is a definitive assertion (see above example) (Habannaka 228).

وَالْمُكَرَّرُ بَيْنَ مُقَدَّمَتَيِ الْقِيَاسِ يُسَمَّى حَدًّا أَوْسَطَ. وَمَوْضُوعُ الْمَطْلُوبِ يُسَمَّى حَدًّا أَصْعَرَ. وَمَحْمُولُهُ يُسَمَّى حَدًّا أَكْبَرَ. وَالْمُقَدَّمَةُ الَّتِي فِيهَا الْأَصْعَرُ تُسَمَّى صُغْرَى، وَالْمُقَدَّمَةُ الَّتِي فِيهَا الْأَكْبَرُ تُسَمَّى كُبْرَى. وَهَيَّةُ التَّالِيفِ مِنَ الصُّغْرَى وَالْكُبْرَى تُسَمَّى شَكْلًا.

The statement that is repeated within the two propositions is called the middle term (*hadd awsat*). The subject of the conclusion is called the minor term (*hadd aṣghar*), and its predicate is called the major term (*hadd akbar*).³⁷ The proposition that contains the minor term is called the minor premise (*sughrā*), and the proposition that contains the major term is called the major premise (*kubrā*). The form of its composition of the minor premise and major premise is called the figure (*shakl*).

وَالْأَشْكَالُ أَرْبَعَةٌ، لِأَنَّ الْحَدَّ الْأَوْسَطَ إِنْ كَانَ مَحْمُولًا فِي الصُّغْرَى وَمَوْضُوعًا فِي الْكُبْرَى فَهُوَ الشَّكْلُ الْأَوَّلُ، وَإِنْ كَانَ بِالْعَكْسِ فَهُوَ الرَّابِعُ، وَإِنْ كَانَ مَوْضُوعًا فِيهِمَا فَهُوَ الثَّالِثُ، وَإِنْ مَحْمُولًا فِيهِمَا فَهُوَ الثَّانِي. فَهَذِهِ هِيَ الْأَشْكَالُ الْأَرْبَعَةُ الْمَذْكُورَةُ فِي الْمَنْطَقِ.

There are four figures,³⁸ for if the middle term is the predicate of the minor premise and the subject of the major premise, the form is the first figure (*shakl awwal*); the opposite is the fourth [figure] (*shakl rābi'*). If it is the subject of both, the form is the third (*shakl thālith*), and if it is the predicate of both, the form is the second (*shakl thānī*). These, then, are the four figures of a syllogism in logic.³⁹

³⁷ The major term is rightfully called that, since it must be more general (*a'amm*) than the minor term; if it is more specific than the minor term, the syllogism will not be valid (Habannaka 230).

³⁸ Logically there can only be four figures. Logically, each figure can have sixteen moods, yet only some of them are valid, i.e., result in sound conclusions. The valid moods, with their accompanying conditions, are essential in the study of syllogisms, since not every syllogism yields a valid conclusion, even if it has all the components of a syllogism. For example, "No human is a stone, and no stone is a creature; hence, no human is

a creature" or "Hence, some humans are not creatures." Although this syllogism is composed of a major and minor premise, and the minor, middle and major terms, either conclusion is invalid because the syllogism does not fulfill the conditions of a valid mood, as explicated below (Habannaka 233, 236).

³⁹ The four figures are numbered in order of excellence, the first being the best, followed by the second, etc. A syllogism that is not based on one of these four figures is not sound, such as, "Every human is a creature, and every horse neighs" (Damanhūrī 13).

[وَالشَّكْلُ الثَّانِيُّ مِنْهَا يَرْتَدُ إِلَى الْأَوَّلِ بِعَكْسِ الْكُبْرَى. وَالثَّالِثُ يَرْتَدُ إِلَيْهِ بِعَكْسِ الصُّغْرَى. وَالرَّابِعُ يَرْتَدُ إِلَيْهِ بِعَكْسِ التَّرْتِيبِ أَوْ بِعَكْسِ الْمُقْدَمَتَيْنِ جَمِيعًا. وَالْكَامِلُ الْبَيْنُ الْإِنْتَاجِ هُوَ الْأَوَّلُ.]

[The second figure turns into the first by converting the major premise, and the third turns into it (the first) by converting the minor premise. The fourth turns into it (the first) by converting the order (of the two premises) or by converting both premises. The perfect type of syllogism, which yields its conclusion for all types of propositions, is the first figure.⁴⁰]

وَالشَّكْلُ الرَّابِعُ مِنْهَا بَعِيدٌ عَنِ الطَّبْعِ جِدًّا. وَالَّذِي لَهُ عَقْلٌ سَلِيمٌ وَطَبْعٌ مُسْتَقِيمٌ لَا يَحْتَاجُ إِلَى رَدِّ الثَّانِيِّ إِلَى الْأَوَّلِ. وَإِنَّمَا يُنْتَجُ الثَّانِيُّ عِنْدَ اخْتِلَافِ مُقْدَمَتَيْهِ بِالْإِيجَابِ وَالسَّلْبِ.

The fourth figure is very unnatural. The one who has a sound intellect and an upright nature does not need to turn the second into the first. The second only yields a conclusion when the premises differ in affirmation and negation.

وَالشَّكْلُ الْأَوَّلُ هُوَ الَّذِي جَعَلَ مِعْيَارًا لِلْعُلُومِ. فَتُورِدُهُ هُنَا لِيُحَجَّلَ دُسْتُورًا وَيُسْتَنْجَ مِنْهُ الْمَطْلُوبُ. [وَشَرْطٌ إِنْتَاجِ إِيجَابِ الصُّغْرَى وَكُلِّيَّةِ الْكُبْرَى].

The first figure is the one that is considered a standard for various fields of study, so we will explain it here for it to serve as a template and so the aim may be derived

⁴⁰ This paragraph is not present in the text used for this translation, but is found in another copy of the text (*Mutūn al-Mantiq wa 'l-Ḥikma*) and was taken from there.

The first figure corresponds most to natural sequence of thought, as the mind naturally moves from the minor term to the middle term to the major term. Moreover, in and of itself gives rise to all types of conclusions, namely, affirmative universal, negative universal, affirmative particular, and negative particular. As for singular conclusions, they are effectively universal, and as for indeterminate conclusions, they are effectively particular (Habannaka 236).

وَضُرُوبُهُ الْمُتَتْحَةُ أَرْبَعَةٌ. الْأَوَّلُ كَقَوْلَنَا كُلُّ جَسْمٍ مُؤَلَّفٌ وَكُلُّ مُؤَلَّفٍ مُحْدَثٌ فَكُلُّ جَسْمٍ مُحْدَثٌ. وَالثَّانِي كَقَوْلَنَا كُلُّ جَسْمٍ مُؤَلَّفٌ وَلَا شَيْءٌ مِنَ الْمُؤَلَّفِ بِقَدِيمٍ، فَلَا شَيْءٌ مِنَ الْجَسْمِ بِقَدِيمٍ. وَالثَّالِثُ كَقَوْلَنَا بَعْضُ الْجَسْمِ مُؤَلَّفٌ وَكُلُّ مُؤَلَّفٍ حَادِثٌ فَبَعْضُ الْجَسْمِ حَادِثٌ. وَالرَّابِعُ كَقَوْلَنَا بَعْضُ الْجَسْمِ مُؤَلَّفٌ وَلَا شَيْءٌ مِنَ الْمُؤَلَّفِ بِقَدِيمٍ فَبَعْضُ الْجَسْمِ لَيْسَ بِقَدِيمٍ.

thereby. [The conditions for it to yield a conclusion are affirmation of the minor premise and universality of the major premise.]⁴¹

Its valid moods (*durūb*) that yield a conclusion are four:

1. The First Valid Mood⁴² is for example: Every physical body is composed, and every composed thing is originated; hence, every physical body is originated.
2. The Second Valid Mood⁴³ is for example: Every physical body is composed, and nothing that is composed is preeternal; hence, no physical body is preeternal.
3. The Third Valid Mood⁴⁴ is for example: Some physical bodies are composed, and every composed thing is temporal; hence, some physical bodies are temporal.
4. The Fourth Valid Mood⁴⁵ is for example: Some physical bodies are composed, and nothing that is composed is preeternal; hence, some physical bodies are not preeternal.⁴⁶

⁴¹ This sentence is not present in the text used for this translation, but is found in another copy of the text (*Mutūn al-Mantiq wa'l-Ḥikma*) and was taken from there.

⁴² Both premises are affirmative universal. The conclusion is affirmative universal (*Damanhūrī* 13). Other examples are as follows:

Every fish is a creature, and every creature moves by its own volition; hence, every fish moves by its own volition. From prophetic speech:

"Every son of Ādām is a sinner, and the best of sinners are the oft-repentant" (*Tirmidhī*, *Ibn Mājā* with slight variation in wording) which yields the conclusion "The best of the children of Ādām are the oft-repentant." Of course, for the major premise to be complete, the following is implied therein "Of all sinners, the best of sinners are the oft-repentant."

"Each of you is from Ādām, and Ādām is from dust" (*Abū Dāwūd*, *Tirmidhī* with slight variation in wording) which yields the conclusion "Each of you is from dust."

"Each of you is a shepherd, and every shepherd is responsible for his flock" (*Bukhārī*, *Muslim* with slight variation in wording) which yields the conclusion "Each of you is responsible for his flock" (*Habannaka* 239-40).

⁴³ Both premises are universal; the minor premise is affirmative, and the major premise is negative. The conclusion is negative universal (*Damanhūrī* 13). Other examples are as follows:

"Every soul is held as collateral for what it earns" (*Qur'ān* 74:38), and no one is held as collateral for what it earns unless it has

free will; hence, there is no soul that earns except that it has free will.

"Everything therein [the earth] shall perish, and the face of your Lord remains forever" (*Qur'ān* 55:26-7), and nothing that will perish is preeternal; hence, nothing therein [earth] is preeternal.

"Every soul shall taste death" (*Qur'ān* 21:35), and nothing dies except that it has life; hence, there is no soul except that it has life (*Habannaka* 242-3).

⁴⁴ Both premises are affirmative; the minor premise is particular, and the major premise is universal. The conclusion is affirmative particular (*Damanhūrī* 13). Other examples are as follows:

"And of mankind are those who say, —We believe in Allāh and the Last Day|| yet they are not really believers" (*Qur'ān* 2:8), and anyone who says, "I believe in Allāh and the Last Day" while lying is a hypocrite; hence, among mankind are hypocrites.

"And indeed, many people are transgressors" (*Qur'ān* 5:49), and every transgressor is misguided; hence, many people are misguided. "And of mankind is he who sells himself seeking the good pleasure of Allāh" (*Qur'ān* 2:207), and anyone who sells himself seeking the good pleasure of Allāh is granted Paradise; hence, of mankind is a group granted Paradise (*Habannaka* 244).

⁴⁵ The minor premise is affirmative particular, and the major premise is negative universal. The conclusion is negative particular (*Damanhūrī* 14). Other examples are as follows:

وَالْقُرْآنِيُّ إِمَّا مُرَكَّبٌ مِّنْ حَمْلَيْتِينِ كَمَا مَرَّ،

A syllogism by coupling is either composed of two categorical propositions, as explained above;

وَإِمَّا مِنْ مُتَّصِلَتِينِ كَقَوْلَنَا إِنْ كَانَتِ الشَّمْسُ طَالِعَةً فَالنَّهَارُ مَوْجُودٌ وَكُلُّمَا كَانَ النَّهَارُ مَوْجُودًا فَالْأَرْضُ مُضَيْئَةٌ يُتَّسِّعُ إِنْ كَانَتِ الشَّمْسُ طَالِعَةً فَالْأَرْضُ مُضَيْئَةٌ.

Or of two conjunctive conditional propositions, like our statement, “If the sun has risen, then daylight is present; and whenever daylight is present, the earth is illuminated,” which yields, “If the sun has risen, the earth is illuminated;”⁴⁷

وَإِمَّا مُرَكَّبٌ مِّنْ مُنْفَصِلَتِينِ كَقَوْلَنَا كُلُّ عَدَدٍ فَهُوَ إِمَّا زَوْجٌ أَوْ فَرْدٌ وَكُلُّ زَوْجٍ فَهُوَ إِمَّا زَوْجُ الزَّوْجِ أَوْ زَوْجُ الْفَرْدِ يُتَّسِّعُ مِنْ هَاتَيْنِ الْمُقَدَّمَتِينِ كُلُّ عَدَدٍ فَهُوَ إِمَّا فَرْدٌ أَوْ زَوْجُ الزَّوْجِ أَوْ زَوْجُ الْفَرْدِ.

Or of two disjunctive conditional propositions, like our statement, “Every number is either even or odd, and every even number is either a pair of even numbers or a pair of odd numbers,” which yields from these two propositions, “Every number is either odd, a pair of even numbers, or a pair of odd numbers;”

Some people perform righteous works, and no one who performs righteous works is cheated; hence, some people are not cheated.

Some of those who perform works will be recompensed well by Allāh, and no one who is recompensed well by Allāh is miserable; hence, some of those who perform works are not miserable (Ḥabannaka 246).

46 After the above presentation of the valid moods for the first figure, the following serves as a presentation of the valid moods for the remaining three figures. All examples are of categorical propositions, although the four figures and their valid moods apply also to conditional propositions.

Figure Two:

There are two conditions for it to yield a sound conclusion: (1) the minor and major premises must differ in affirmation and negation, and (2) the major premise must be universal.

This figure has a total of four valid moods, as follows:

1. Every human is a creature, and no stone is a creature; hence, no human is a stone. Both premises are universal; the minor premise is affirmative, and the major premise is negative. The conclusion is negative universal.

Other examples are as follows:

Everyone who actually laughs is happy, and no sad person is happy; hence, no one who actually laughs is sad. Every living person eats, and no idol eats; hence, no living person is an idol.

2. No stone is a creature, and every human is a creature; hence,

no stone is a human. Both premises are universal; the minor premise is negative, and the major premise is affirmative. The conclusion is negative universal.

Other examples are as follows:

No sad person is happy, and anyone who actually laughs is happy; hence, no sad person actually laughs. No horse is a human, and anyone who laughs is a human; hence, no horse laughs.

There is nothing vain in Paradise, and all good is in Paradise; hence, nothing vain is good.

3. Some humans are creatures, and no stone is a creature; hence, some humans are not stones. The minor premise is affirmative particular, and the major premise is negative universal. The conclusion is negative particular.

Other examples are as follows:

Some people can write, and no unlettered person can write; hence, some people are not unlettered.

A group of people will be in Paradise, and no disbeliever will be in Paradise; hence, some people are not disbelievers.

“And of mankind is he whose speech about the life of this world pleases you, and he calls Allāh to witness as to that which is in his heart, yet he is the most contentious of adversaries” (Qur’ān 2:204), and no pious believer is of this description; hence, some people are not of this description.

4. Some stones are not creatures, and every human is a creature; hence, some stones are not human. The minor premise is

negative particular, and the major premise is affirmative universal. The conclusion is negative particular.

Other examples are as follows:

Some fruits are not bitter, and every fruit from the colocynth plant is bitter; hence, some fruits are not from the colocynth plant.

Some people will not enter Paradise, and every believer will enter Paradise; hence, some people are not believers.

The conclusions for all four moods are negative; universal in the first two, particular in the last two.

Figure Three

There are two conditions for it to yield a sound conclusion: (1) the minor premise must be affirmative, and (2) one of the premises must be universal.

This figure has a total of six valid moods, as follows:

1. Every human is a creature, and every human is rational; hence, some creatures are rational. Both premises are affirmative universal. The conclusion is affirmative particular. Other examples are as follows:

Every human is a creature, and every human is receptive to knowledge and the skill of writing; hence, some creatures are receptive to knowledge and the skill of writing.

Every piece of gold is from a mine, and every piece of gold is not affected by acidity; hence, some things from mines are not affected by acidity.

2. Some humans are creatures, and every human is rational; hence, some creatures are rational. Both premises are affirmative; the minor premise is particular, and the major premise is universal. The conclusion is affirmative particular.

Other examples are as follows:

Some people are poets, and all people breathe with their lungs; hence, some poets breathe with their lungs. Some creatures are human, and every creature moves by volition; hence, some humans move by volition. Some roses are red, and every rose is a plant; hence, some red things are plants.

3. Every human is a creature, and some humans are rational; hence, some creatures are rational. Both premises are affirmative; the minor premise is universal, and the major premise is particular. The conclusion is affirmative particular.

Other examples are as follows:

Every architect is proficient in designing buildings, and some architects are artists; hence, some of those who are proficient in designing buildings are artists.

Everyone who can draw is an artist, and some people who can draw are crazy; hence, some artists are crazy.

4. Every human is a creature, and no human is a stone; hence, some creatures are not stones. Both premises are universal;

the minor premise is affirmative, and the major premise is negative. The conclusion is negative particular. Other examples are as follows:

Every sleeping person loses his external senses, and no sleeping person is legally responsible; hence, some people who lose external senses are not legally responsible.

Every insane person lacks rational thinking, and no insane person is legally responsible; hence, some people who lack rational thinking are not legally responsible.

Every architect is proficient in designing buildings, and no architect is blind; hence, some of those who are proficient in designing buildings are not blind.

5. Some humans are creatures, and no human is a stone; hence, some creatures are not stones. The minor premise is affirmative particular, and the major premise is negative universal. The conclusion is negative particular.

Other examples are as follows:

Some roses are red, and no rose is blood; hence, some red things are not blood. Some water is brackish, and no water is oil; hence, some brackish things are not oil.

6. Every human is a creature, and some humans are not stones; hence, some creatures are not stones. The minor premise is affirmative universal, and the major premise is negative particular. The conclusion is negative particular.

Other examples are as follows:

Every minor is absolved from legal responsibility, and some minors have invalid prayers; hence, some of those absolved from legal responsibility have invalid prayers. [Note: The invalidity of the prayers is the negative component of both the major premise and the conclusion.]

Any water that remains of its original nature is pure, and some water that remains of its original nature is not water free from impurities; hence, some pure water is not free from impurities.

This figure, then, yields only particular conclusions—affirmative in the first three moods, and negative in last three moods. Figure Four

There is one condition for the fourth figure to yield a conclusion, namely, the lack of both lower states being present (lower states referring to negation and particularity), except in one case.

This rule applies to four valid moods, and with the exception this figure has a total of five valid moods, as follows:

1. Every human is a creature, and every rational [entity] is a human; hence, some creatures are rational. Both premises are affirmative universal. The conclusion is affirmative particular.

Other examples are as follows:

Everyone who truly fears Allāh has knowledge of Him, and everyone who completely adheres to the rulings of the religion truly fears Allāh; hence, some of those who know Allāh completely adhere to the rulings of the religion.

Every star adorns the sky, and every effulgent heavenly body is a star, hence, some of the adornment of the sky is an effulgent heavenly body.

2. Every human is a creature, and some rational entities are human; hence, some creatures are rational. Both premises are affirmative; the minor premise is universal, and the major premise is particular. The conclusion is affirmative particular.

Other examples are as follows:

All milk is white, and some edible things are white; hence, some white things are edible.

Every egg has a shell, and some things that break are eggs; hence, some things with shells break.

3. No human is a stone, and every rational entity is a human; hence, no stone is rational. Both premises are universal; the minor premise is negative, and the major premise is affirmative. The conclusion is negative universal.

Other examples are as follows:

No human is a fish, and anyone who can laugh is a human; hence, no fish can laugh.

No parent can avail aught for his son on the Day of Arising (see Qur'ān 31:33), and every ancestor is a "parent;" hence, no ancestor can avail for any offspring on the Day of Arising.

4. Every human is a creature, and no stone is a human; hence, some creatures are not stones. Both premises are universal; the minor premise is affirmative, and the major premise is negative. The conclusion is negative particular.

Other examples are as follows:

Every camel has a long neck, and nothing with a hoof is a camel; hence, some things with long necks do not have hoofs.

Every scholar is of a higher rank than the ignorant person, and no bull is a scholar; hence, some of those of a higher rank than the ignorant person are not bulls.

5. Some humans are creatures, and no stone is a human; hence, some creatures are not stones. The minor premise is affirmative particular, and the major premise is negative universal; the conclusion is negative particular. This is the exception to the rule of this figure, as both lower states—negation and particularity—are present in the figure.

Other examples are as follows:

Some people are believers, and no angel is a human; hence, some believers are not angels.

Some meat is licit to eat, and no cucumber is meat; hence, some of what is licit to eat is not cucumber.

There is some discrepancy in the order of some of the moods for figures three and four; the above order was taken from Imām

وَإِمَّا مِنْ حَمْلِيَّةٍ وَمُنْفَصِلَةٍ كَقَوْلَنَا كُلُّمَا كَانَ هَذَا إِنْسَانًا فَهُوَ حَيَّانٌ، وَكُلُّ حَيَّانٌ جِسْمٌ، يُنْتَجُ: كُلُّمَا كَانَ هَذَا إِنْسَانًا فَهُوَ جِسْمٌ.

Or of a categorical proposition and a conjunctive conditional proposition, like our statement, “As long as this is a human, he is a creature; and every creature is a body,” which yields, “As long as this is a human, he is a body;”⁴⁸

وَإِمَّا مِنْ حَمْلِيَّةٍ وَمُنْفَصِلَةٍ كَقَوْلَنَا كُلُّ عَدَدٍ إِمَّا زَوْجٌ وَإِمَّا فَرْدٌ، وَكُلُّ زَوْجٍ فَهُوَ مُنْقَسِمٌ بِمُتَسَاوِيَّنِ، يُنْتَجُ: كُلُّ عَدَدٍ فَهُوَ إِمَّا فَرْدٌ أَوْ مُنْقَسِمٌ بِمُتَسَاوِيَّنِ.

Or of a categorical proposition and a disjunctive conditional proposition, like our statement, “Every number is either even or odd, and every even number is divisible by equal halves,” which yields, “Every number is either odd or divisible by equal halves;”⁴⁹

وَإِمَّا مِنْ مُتَّصِلَةٍ وَمُنْفَصِلَةٍ كَقَوْلَنَا كُلُّمَا كَانَ هَذَا إِنْسَانًا فَهُوَ حَيَّانٌ، وَكُلُّ حَيَّانٌ إِمَّا أَبْيَضٌ وَإِمَّا أَسْوَدٌ. يُنْتَجُ: كُلُّمَا كَانَ هَذَا إِنْسَانًا فَهُوَ إِمَّا أَبْيَضٌ أَوْ أَسْوَدٌ.

Or of a conjunctive conditional proposition and a disjunctive conditional proposition, like our statement, “As long as this is a human, he is a creature, and every creature is either white or black,” which yields, “As long as this is a human, he is either white or black.”

Damanhūrī’s *Īdāh al-Mubham* (14–15) and Imām Akhdarī’s commentary of his *Sullam* (34), while most of the examples were taken from Imām Ḥabannaka’s *Qawāṣidh al-Āṣāfiya* (24763).

By understanding the moods that yield sound conclusions for all four figures, one understands that any other conceivable mood for any figure does not yield a sound conclusion, and is hence invalid (Damanhūrī 15).

In addition, the conclusion for all valid moods always follows the lower state of each premise, lower states referring to negation and particularity (Damanhūrī 15).

47 Or for example, “Every time they ignite the fire of war, Allāh puts it out” (Qur’ān 5:64); and every time Allāh puts out the fire of war, its evil stops. Hence, Every time they ignite the fire of war, its evil stops (Habannaka 240).

48 Or for example, “Whatever you put forth for yourselves of good, you will find it with Allāh” (Qur’ān 2:110); and every good with Allāh is a beautiful gift. Hence, whatever you put forth for yourselves of good, you will find its reward to be a beautiful gift (Habannaka 240).

49 Or for example, the prophetic ḥadīth “Every person goes out in the morning and then sells his soul, either freeing it or destroying it” (Muslim, Tirmidhī), which can be presented in the following syllogism:

Every person goes out in the morning and then sells his soul; and whoever sells his soul either frees it by selling it to the All-Merciful, or destroys it by selling it to the devil. Hence, every person goes out in the morning and then sells his soul, either freeing it or destroying it (Habannaka 241).

50 The syllogism by exclusion is always conditional in that its major premise (*kubrā*) is a conditional proposition, either conjunctive or disjunctive.

If it is conjunctive, the syllogism yields a conclusion in only two cases—exclusion of the antecedent itself, and exclusion of the contradictory of the consequent—as presented above. Exclusion of the consequent itself does not yield a conclusion, nor does exclusion of the contradictory of the antecedent. For example, in the syllogism “If this is a human, then it is a creature,” the exclusion of the consequent itself “And indeed, it is a creature,” or of the contradictory of the antecedent “However, it is not a human,” yields no conclusion. Hence for such a syllogism, there are two valid moods and two invalid moods (Damanhūrī 16).

Examples of its valid moods are as follows:

“Had there been therein gods besides Allāh, they both (the heavens and the earth) would have been disordered” (Qur’ān 21:22); however, they are not disordered. Hence, there are no gods besides Allāh.

وَأَمَّا الْقِيَاسُ الْاسْتِئْنَائِيُّ فَالشَّرْطِيُّ الْمَوْضُوعَةُ فِيهِ إِذَا كَانَتْ مُتَصَلَّةً [مُوجَّهَةً لِرُوْمِيَّةٍ] فَاسْتِئْنَاءُ عَيْنِ الْمُقَدَّمِ يُنْتَجُ عَيْنَ التَّالِيِّ كَقَوْلَنَا إِنْ كَانَ هَذَا إِنْسَانًا فَهُوَ حَيَّانٌ لَكِنَّهُ إِنْسَانٌ فَهُوَ حَيَّانٌ. وَاسْتِئْنَاءُ نَقِيْضِ التَّالِيِّ يُنْتَجُ نَقِيْضَ الْمُقَدَّمِ كَقَوْلَنَا إِنْ كَانَ هَذَا إِنْسَانًا فَهُوَ حَيَّانٌ لَكِنَّهُ لَيْسَ بِحَيَّانٍ فَلَا يَكُونُ إِنْسَانًا. وَإِنْ كَانَتْ مُنْفَصِلَةً حَقِيقَيَّةً فَاسْتِئْنَاءُ عَيْنِ أَحَدِ الْجُزْءَيْنِ يُنْتَجُ نَقِيْضَ الْآخَرِ، وَاسْتِئْنَاءُ نَقِيْضِ أَحَدِهِمَا يُنْتَجُ عَيْنَ الْآخَرِ.

As for a syllogism by exclusion, if the conditional statement were a [mandatory] conjunctive [affirmative] proposition, then exclusion of the antecedent itself yields the consequent itself, like our statement, “If this is a human, then it is a creature. And indeed, it is a human; hence, it is a creature.” Exclusion of the contradictory of the consequent yields the contradictory of the antecedent, like our statement, “If this is a human, then it is a creature. However, it is not a creature; hence, it is not a human.”⁵⁰

If it were a literal disjunctive proposition, then exclusion of one of the two parts itself yields the contradictory of the other part, and exclusion of the contradictory of one of the two parts yields the other part itself.⁵¹

“Had he [Prophet Yūnus] not been amongst those who glorify (Allāh), he would have tarried in its belly until the Day in which they are resurrected” (Qur’ān 37:143–4); however, he did not tarry in its belly until that Day. Hence, he was amongst those who glorify (Allāh).

“Had it [faith in this religion] been good, they [the believers] would not have preceded us to it” (Qur’ān 46:11); however, they preceded us to it. Hence, it is not good. This is the statement of the polytheists regarding the religion and the believers|| preceding them in faith; the syllogism, of course, is invalid, as its major premise is not true, since their preceding them in faith in no way indicates that the religion is not good.

“Were he to invent words regarding Us, We would surely have taken him by the right hand, and then severed his very aorta” (Qur’ān 69:44–6); however, We did not take him by the right hand and sever his aorta. Hence, he did not invent any words regarding Us (Ḥabannaka 274–5).

⁵¹ For a syllogism of exclusion with a disjunctive conditional proposition as its major premise, that premise must be affirmative. In addition, either the major premise or the minor premise (which begins with the particle of exclusion “however” or “and indeed”) must be universal, or singular (since it is effective universal) (Ḥabannaka 278).

If the major premise of a syllogism of exclusion is disjunctive, it is either mutually exclusive and totally exhaustive (or literal), mutually exclusive only, or totally exhaustive only.

The first type is discussed above in the text; it has four valid moods. For example in the syllogism, “A number is either even or odd,” exclusion of either part yields the contradictory of the other part; that is, “However, it is even,” yields “Hence, it is not odd,” and “However, it is odd,” yields “Hence, it is not even.” Also, exclusion of the contradictory of either part yields the other part itself; that is, “However, it is not even,” yields “Hence, it is odd,” and “However, it is not odd” yields “Hence, it is even.”

The second type, if the major premise is mutually exclusive only, has two valid moods, as exclusion of one of the two parts itself yields the contradictory of the second part, and two invalid moods, as exclusion of the contradictory of one part does not yield anything. For example in the statement, “This thing is either white or black,” exclusion of white “However, it is white” yields the contradictory of black “Hence, it is not black,” and vice-versa. Yet exclusion of the contradictory of white “However, it is not white” or the contradictory of black “However, it is not black” yields nothing.

The third type, if the major premise is totally exhaustive only, also has two valid moods and two invalid moods, the exact opposite of the above. For example in the statement, “Zaid is either in a body of water, or is not drowning,” exclusion of the contradictory of one part yields the other part itself, and vice-versa. “However, he is not in a body of water” yields “Hence, he is not drowning,” and

“However, he is in a body of water,” or “However, he is not drowning,” yield no conclusions (Damanhūrī 16–17).

[The Five Skills]

الْبُرْهَانُ هُوَ قِيَاسٌ مُؤَلَّفٌ مِنْ مُقَدَّمَاتٍ يَقِينِيَّةٍ لِإِنْتَاجِ الْيَقِينِ. وَالْيَقِينِيَّاتُ سِتَّةُ أَقْسَامٍ: أَوْلَيَّاتٌ كَقَوْلَنَا الْوَاحِدُ نَصْفُ الْإِثْنَيْنِ وَالْكُلُّ أَعْظَمُ مِنَ الْحُزْنِ. وَمُشَاهَدَاتٌ كَقَوْلَنَا الشَّمْسُ مُشْرِقَةٌ وَالنَّارُ مُحْرِقَةٌ. وَمُحَرَّبَاتٌ كَقَوْلَنَا شُرْبُ السَّقَمُونِيَا يُسَهِّلُ الصَّفَرَاءَ. وَحَدِسَيَّاتٌ كَقَوْلَنَا نُورُ الْقَمَرِ مُسْتَفَادٌ مِنْ نُورِ الشَّمْسِ. وَمَتَوَازِيَّاتٌ كَقَوْلَنَا مُحَمَّدٌ ﷺ ادَّعَى النُّبُوَّةَ وَأَظَهَرَ الْمُعْجَزَةَ. وَقَضَائِيَا قِيَاسَاتُهَا مَعَهَا كَقَوْلَنَا الْأَرْبَعَةُ زَوْجٌ بِسَبَبِ وَسْطٍ حَاضِرٍ فِي الذَّهْنِ وَهُوَ الْإِنْقِسَامُ بِمُتَسَاوِيَّينِ.

Absolute Proof (*burhān*): a syllogism composed of premises of certainty to yield a conclusion of certainty.⁵²

There are six types of premises of certainty:

1. Inherent, a priori premises (*awwaliyyāt*),⁵³ like our statement, “One is half of two,” or “A whole is larger than its part.”
2. Perceived premises [with the senses] (*mushāhadāt*),⁵⁴ like our statement, “The sun is shining,” or “The fire is burning.”
3. Empirical premises (*mujarrabāt*), like our statement, “Seammony is a laxative of yellow bile.”
4. Conjectural premises (*hadsīyyāt*), like our statement, “The light of the moon is derived from the light of the sun.”

⁵² An example of an absolute proof found in the Qur’ān is that of recreation of created things, presented in the following syllogism by exclusion:

He who is able to create something from nothing is able to recreate it after its death and annihilation, as the two are equivalent; and indeed, Allāh Most High is able to create things from nothing. Hence, He is able to recreate anything as well (Habannaka 298).

⁵³ That is, a premise that the intellect grasps without any need of reflection (Damanhūrī 18).

⁵⁴ Some also included in this category what are termed *wujdāniyyāt*, that is, premises perceived by internal senses without need of thought, such as hunger, thirst, pleasure, or pain (Damanhūrī 18).

⁵⁵ This statement was taken from another copy of the text (*Mutūn al-Mantiq wa 'l-Hikma*).

The goal of disputation is to overcome one’s adversary or to convince someone who is incapable of understanding an absolute proof (*burhān*) (Damanhūrī 18). Other examples are as follows:

We deem the following things as good and beautiful: spreading peace, feeding the hungry, maintaining kinship ties, speaking truthfully, and having laws based on justice.

We deem the following things as evil and repulsive: harming one’s fellow man, killing animals, spreading calumny, and returning a favor with ingratitude and transgression.

Yet these premises are not at the level of certainty only if we do not consider their origins from divine legislation; if we do consider their origins, they are rendered premises of certainty.

An example from the Qur’ān is based on verses such as: “Should We then treat those who submit as [We do] criminals? What is the matter with you? How do you judge?” (68:35–6), and “Or should We treat those who believe and perform righteous acts as [We do] transgressors in the earth, or should We treat the pious as [We do] the corrupt?” (38:28).

This argument can be presented as follows: If a Day of Recompense and Accounting were not a reality, then this life would entail equal treatment of those who submit and criminals, thereby rendering the Creator unjust; however, His attribute of justice is an affirmed reality. Hence, there cannot be equal treatment of those who submit and criminals; hence, there must

5. Uninterrupted premises [transmitted by multiple chains of narration] (*mutawātirāt*), like our statement, “Muhammad claimed prophecy, and performed initimable miracles.” “However, he is drowning” yields “Hence, he is in a body of water.” However, exclusion of one part itself is an invalid mood;

6. Instinctive premises, whose syllogisms are implicitly present, like our statement, “Four is even,” by means of an intermediary that is present in the mind, namely, division into two equal parts.

وَالْجَدَلُ وَهُوَ قِيَاسٌ مُؤَلَّفٌ مِنْ مُقَدَّمَاتٍ مَشْهُورَةٍ [لَا مُسْلِمٌ عِنْدَ النَّاسِ أَوْ عِنْدَ الْخَصْمَيْنِ كَقَوْلَنَا الْعَدْلُ حَسَنٌ وَالظُّلْمُ قَبِيْحٌ].

Disputation (*jadal*): a syllogism composed of well-known premises [but not conceded to, according to people or according to the two adversaries, like our statement, “Justice is beautiful, and oppression is repulsive”].⁵⁵

وَالْخَطَابَةُ وَهِيَ قِيَاسٌ مُؤَلَّفٌ مِنْ مُقَدَّمَاتٍ مَقْبُولَةٍ مِنْ شَخْصٍ مُعْتَقِدٍ فِيهِ أَوْ مَظْنُونَةٍ.

Oration (*khaṭāba*): a syllogism composed of either premises that are accepted from a someone trustworthy, or of presumed premises.⁵⁶

وَالْشِعْرُ وَهُوَ قِيَاسٌ مُؤَلَّفٌ مِنْ مُقَدَّمَاتٍ تَبَسِّطُ مِنْهَا النَّفْسُ أَوْ تَنْقَبِضُ.

Provocation (*shī'r*): a syllogism composed of premises by which the soul is either expanded or constricted⁵⁷

be a Day of Recompense and Accounting. The Last Day, then, is an affirmed reality (Ḥabannaka 299–300).

⁵⁶ An example of a presumed premise is “This person does not interact with people, and whoever does not interact with people is arrogant; hence, this person is arrogant.” The goal of oration is to incite the listener to that which will benefit him, whether in this life or the next (Damanhūrī 18).

Most worldly affairs and personal matters are based on presumed premises, that are not absolutely certain yet still given enough due consideration whereby they can be relied upon in day-to-day life. These include laws of a nation-state, court rulings based on evidence, and even scientific theories (that form the foundation of modern medicine and technology), as all of these are very much based on presumption, even if strong and close to certainty.

Many Qur’ānic examples of presumed premises are often centered around proving divine oneness, such as the following verse:

“He strikes for you a parable from your own selves—do you have, among those whom your right hands possess, any partners in that which We provide for you, such that you are equal therein?

Do you fear them as you fear each other? Such do We explain [Our] signs for people of intellect” (Qur’ān 30:28).

That is, O polytheists who ascribe to Allāh partners from His own creation, from His own servants, would you be content with the same for yourselves, with respect to the slaves that you own? Would be content with your slaves being partners with you in that which you own, vying with them in those possessions? Do you fear them as you do yourselves, conceding to their partnership with you?

If you are not content with that, due to what it would entail of your rank being lowered in your estimation, then are you content with the same for your Creator? (Ḥabannaka 301–2).

⁵⁷ For example, “Wine is a flowing ruby.” The goal of provocation is to cause a reaction in the soul to incite it towards, or to discourage it from, something (Damanhūrī 18). It is based primarily on emotion, and is commonly used in poetry (Ḥabannaka 302).

وَالْمُعَالَطَةُ وَهِيَ قِيَاسٌ مُؤَلَّفٌ مِنْ مَقْدِّمَاتٍ كَاذِبَةٍ شَبِيهَةٍ بِالْحَقِّ أَوْ بِالْمَسْهُورِ أَوْ مِنْ مَقْدِّمَاتٍ وَهُمْ مُؤَلَّفٌ كَاذِبَةٍ.

Logical Fallacy (*mughālaṭa*): a syllogism composed of either false premises that appear to be true or well-known premises; or of delusionary, false premises.⁵⁸

وَالْعُمَدَةُ هُوَ الْبُرْهَانُ لَا غَيْرُ.

The only reliable syllogism [of these five types] is Absolute Proof (*burhān*), nothing else.

وَلَيْكُنْ هَذَا آخِرُ الرِّسَالَةِ فِي الْمُنْطَقِ.

This concludes the treatise in logic.

⁵⁸ Such as the statement regarding a picture of a horse on a wall, “This is a horse, and every horse neighs; hence, this neighs.” This type of syllogism is also termed sophistry (*safsaṭa*) or quarrelling (to create discord) (*mushāghaba*); it is unlawful (*harām*) in all of its types. Among the worst of its types is an unrelated fallacy (*mughālaṭa khārijiyā*), which is for the debater who has no understanding and no willingness to submit to the truth to distract the focus of his adversary with that which

confuses him—such as vulgar speech—so as to show people that he has overcome him, by which he covers up his own ignorance. This is common in our time; rather, it is the current situation. This type of syllogism, then, must be learnt as a type of protection, but not for use, except out of necessity such as to repel an obstinate disbeliever. It is therefore like poison, in that it is not to be used except for the vilest of illnesses (Damanhūrī 18).